ON THE COAGULATION OF THE BLOOD IN ITS PRACTICAL ASPECTS.

The Annual Oration delivered before the Medical Society of London, May 4th, 1891,

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MR. PRESIDENT AND GENTLEMEN,—Thirty years ago Dr. Alexander Schmidt of Dorpat enunciated a totally new view of the coagulation of the blood. Having rediscovered the fact observed many years before by Dr. Andrew Buchanan of Glasgow,[1] that hydrocele fluid, uncoagulable in itself, is made to coagulate by the addition to it of the serum of blood already coagulated, and pursuing extended researches in the line thus indicated, he came to the conclusion that fibrin does not exist as such in solution in the plasma, but is composed of two albuminoid substances: one present in the liquor sanguinis, to which he gave the name of "fibrinogen"; and the other a constituent of the blood corpuscles, and this he termed the "fibrino-plastic substance."[2]

It might be objected to Professor Schmidt that the hydrocele fluid and the various dropsical effusions with which he had worked were not fairly comparable to liquor sanguinis; that they were transudations through the walls of vessels, and that the liquor sanguinis might have become in one way or another altered in the process of transudation. This objection was, as I believe, removed by an observation made by myself about the same period.[3] It had fallen to my lot to observe that in mammalia, whereas the blood usually coagulates soon after death in the heart and the main vascular trunks, in the secondary vessels it remains fluid for an indefinite period, and that, not only in those of small calibre, but, if the animal be large, in large vessels also. This being understood, I proceeded as follows. Having removed a portion of the jugular vein of a horse with the blood contained in it, between two ligatures, I suspended this segment of the vein in a vertical position. In the blood of the horse the red corpuscles behave in a totally different manner as regards their aggregation from those of a healthy man or of the ox. In the horse, instead of the red corpuscles assuming the condition of a delicate network of rouleaux, they become aggregated into dense spherical masses, often visible to the naked eye, like coarse grains of sand. And these densely aggregated corpuscles, falling more quickly than the rouleaux in the liquor sanguinis, as hailstones fall more rapidly than snowflakes, soon leave the upper part of the fluid comparatively free from corpuscles, so that within about half an hour the upper third, or it may be half, of the blood is a transparent liquid.[4] When I had ascertained through the translucent walls of the vein that this state of things had occurred, I punctured the upper part of the vessel, so as to let out some of the clear fluid, and found that it was very slow in coagulating. In about three-quarters of an hour it had only begun to coagulate, whereas a little of this same clear fluid, to which a small portion of coagulated blood was added, clotted in a very short period. That the clear fluid did coagulate at all was sufficiently explained by microscopical examination, which showed that there were present in it some red corpuscles and numerous white corpuscles. It was obvious that if we could have separated the corpuscles absolutely from the liquor sanguinis, there would have been no coagulation at all; and as the separation of the corpuscles from the plasma had occurred, not by transudation through vascular walls, but simply as the result of gravity, it could be no longer doubted that Schmidt's conclusions were essentially right.

During the time that has since elapsed various endeavours have been made to ascertain the precise nature and mutual relations of the constituents of the liquor sanguinis and the corpuscles thus concerned in the formation of the fibrin. This inquiry cannot be said to be yet terminated, and it is at the present time uncertain whether Schmidt's simple original view may not be correct—that there are two albuminoid substances, one in the plasma and one in the corpuscles, which combine to constitute fibrin. These investigations, most valuable as they are, have, as it seems to me, somewhat overshadowed the question which is, after all, the most interesting to us as practitioners—namely, What are the circumstances that determine the mutual reaction of these two constituents? What are the conditions under which the corpuscles are induced to give up their element of the fibrin to combine with the element in the liquor sanguinis? This subject engaged a large share of my attention many years ago, and though I am afraid I have not much of novelty to communicate regarding it, yet, in consequence of its very great importance, I have thought that it might perhaps be not unworthy of the circumstances in which the kindness of your Council has placed me this evening.

Shortly before my investigations began, Professor Brücke of Vienna had conducted an inquiry into the conditions which determine coagulation, and had arrived at conclusions which, to a certain extent, resembled those to which I was led.[5] He found, as I also did, that there is a world-wide difference, in their relations towards the blood, between the walls of the living vessels and ordinary solid matter; and Brücke concluded, as Sir Astley Cooper and others had done before him, that this difference consisted in an active state of the living vessels; that the bloodvessels, by an action which they exerted upon the blood, prevented it from coagulating. My investigations, on the other hand, led me to conclude that healthy blood has no spontaneous tendency to coagulate; and that the walls of the bloodvessels are not active, as Brücke supposed, but passive in their relation to coagulation; that ordinary solids induce coagulation by an attractive influence—comparable perhaps to that which a thread exerts in causing the deposition of sugar-candy from a solution of sugar,—while the healthy living tissues differ from ordinary solids in being destitute of this attractive influence.

Out of many experiments tending to this inference, published long ago,[6] I may be permitted again to describe one which not only appears to me conclusive on the point at issue, but is also of interest otherwise. A portion of the jugular vein of an ox with the blood in it being held vertically, I cut off the upper end, taking scrupulous care that the wounded part of the vessel did not come in contact with the blood, and then passed down into the vein a tube composed of very thin glass of a calibre rather less than that of the jugular vein, its upper end being stopped by a perforated cork, in which was inserted a narrow glass tube, which again was continued with a short piece of vulcanised indiarubber tubing. The tube was pressed with the utmost steadiness down into the vein, so as to disturb the blood as little as possible. In the course of time, the vein being a little squeezed, blood made its appearance in the narrow glass tube and then at the end of the indiarubber tube. When this was the case, the indiarubber tube was secured by a clamp, and the whole apparatus was rapidly inverted and the piece of vein withdrawn. Waterproof tissue was then tied over the open end of the large tube, to prevent evaporation and exclude dust, and the tube was securely fixed and left undisturbed. Thus we had blood present in a vessel consisting entirely of ordinary solid matter, but having been subjected in a minimum degree to the influence of the ordinary solid: and the result was, that when I came to examine the blood after the lapse of ten hours, I found it still fluid, with the exception of a crust of clot lining the wall of the vessel. This, gentlemen, seemed to me of itself to afford sufficient evidence that healthy blood has no spontaneous tendency to coagulate, requiring to be kept in check by an action on the part of the walls of the living vessels. This blood had been entirely withdrawn from the vein, and yet it remained fluid except where in contact with the ordinary solid.

This conclusion has been comparatively lately strikingly confirmed by the experiments of more than one observer. I would especially allude to one performed by Professor

[1] Proceedings of the Glasgow Philosophical Society, Feb. 19th, 1845.
[2] See Archiv für Anat. Phys. &c., 1861 and 1862.
[3] See the Croonian Lecture by the author, on the Coagulation of the Blood, proceedings of the Royal Society, June 11th, 1863, p. 606.
[4] The same thing is seen in the mixture of serum and corpuscles obtained by stirring the blood during coagulation. In that from the horse the red corpuscles subside from about the upper third of the liquid within half an hour; whereas that from the ox shows only a thin layer of serum after the lapse of twenty-four hours. I am surprised to see that in some text-books the buffy coat is attributed to slowness of coagulation, with which it has nothing whatever to do.
[5] See British and Foreign Medical Review, 1837.
[6] See the Croonian Lecture, Proceedings of the Royal Society, loc. cit.

Berry Haycraft.[7] He has found that if a drop of blood is introduced under suitable precautions into a deep narrow jar of castor oil, and before the drop, which falls slowly through this oil, has reached the bottom of the vessel, the jar is inverted and the drop made to retrace its steps without having touched the glass, this process being repeated again and again, the drop of blood, having never come in contact with an ordinary solid, remains fluid for an indefinite period. This experiment may perhaps appear to some of you even more conclusive than mine, inasmuch as no coagulation whatsoever occurs in the drop of blood under these circumstances. Certainly it seems to me that it confirms in an absolutely unmistakable manner the view to which I had been previously led.

But there is also this interesting circumstance in Professor Haycraft's observation. It had been shown amply by myself that the gases of the atmosphere are incapable of inducing coagulation of the blood; but experiments like those of Professor Haycraft show that the same is the case with neutral or chemically indifferent liquids. This seems to me to be an exceedingly interesting fact—viz., that the active living tissue, such as lines the wall of a healthy vessel, in its relation to the coagulation of the blood, resembles the mobile particles of a liquid.[8] I say the *active* living tissue, for when the living tissue becomes impaired in vital energy it behaves towards the blood like an ordinary solid. That is the case not only when a vessel is wounded, but also when it is subjected to some influence which, without actually wounding it, is calculated to suspend or impair its vital activity. A good illustration of this is afforded by a fact which I have never before referred to, but which I have often noticed. A very valuable field for simple and instructive observations regarding the conditions that determine the coagulation of the blood was afforded by the feet of sheep, removed after the animals have been killed, the blood being retained in the vessels by a bandage applied below the part where the foot is removed by the butcher. The blood remains fluid for days in the veins of such feet; while, at the same time, the persistent vitality of the vessels is shown by the fact that they contract when exposed by reflection of the skin.[9] Now it happened that the butcher, in order to keep the sheep from struggling, always tied the feet together with a firm cord, applied below the part where my bandage for retaining the blood was passed round; and I invariably found the blood coagulated in the superficial veins at the part where they had been pinched between the cord and the bone. There is no reason to suppose that the temporary application of the cord had deprived the veins of their vitality at the part subjected to its pressure. If the sheep had been released I have no doubt whatever that the veins would have remained alive. But though the vessels had not been wounded, but only squeezed, only had their vital energies temporarily impaired, nevertheless the blood had coagulated in them at the parts so treated. Just as by pinching a portion of the web of a frog's foot with the padded ends of a pair of dressing forceps you can induce, if you press hard enough, a degree of intense inflammatory congestion by which the pigment cells for the time being have their vital functions of diffusion and concentration of the pigment perfectly suspended, and yet are in a condition which is recoverable,[10] so had these veins been subjected to an agency—the pinching by the cord—which did not actually wound them, but merely impaired or suspended for the time being their vital power. Thus it appears that the living tissues which, while in a healthy active state, differ from ordinary solids in not occasioning the coagulation of the blood, when lowered in their vital power, themselves act like ordinary solids and induce coagulation.

Another point to which my investigations were at that time directed was the behaviour of the blood-clot in relation to coagulation. I came to the conclusion that an undisturbed coagulum resembles living tissue in its behaviour with regard to coagulation; that an undisturbed clot does not induce coagulation in its vicinity—a most important truth, if it be such. This is well illustrated by the fact with regard to the sheep's foot to which I have already referred. We have seen that, on the one hand, where the tight cord had pressed the veins, coagulation occurred in those veins; but, on the other hand, that the blood remained permanently fluid in other parts of the same vessels. In other words, the clot induced by the action of the cord upon the veins had not been able to spread, although the blood in the veins was perfectly at rest; the clot could not propagate itself. The same thing is seen in any amputated limb in which the bloodvessels are sound. If such a limb is examined, say, twenty-four hours after amputation, you will find that there exist clots in the vessels where they were wounded by the knife in the operation, but that elsewhere the blood remains fluid and coagulable. I came therefore to the conclusion that an undisturbed blood-clot is unable to induce coagulation in its vicinity; and I think that the instances I have given demonstrate that such is really the case.

Yet in the experiment which I have described, where a glass tube was slipped down into the jugular vein, the coagulum did propagate itself. I found on examining such a tube, ten hours after it had been charged with blood, that the crust of clot which lined the tube was only a thin one; but in another experiment, nearly two days having been allowed to pass before examination, the clot was thick, and there remained only a small channel in the middle of it, with the blood still fluid and coagulable. How is this difference of behaviour between the clot within the vessels and the clot outside them to be explained? At the time when I performed the experiment I was disposed to think that it must be due to some imperfection in the mode of performing it; that in spite of all the care that I had taken in very steadily pressing down the very thin glass tube, nevertheless the blood must have been influenced by the glass for some considerable distance.

I am now inclined to believe that another explanation must be given. It was ascertained by Schmidt that (to adopt provisionally his original nomenclature) the fibrinoplastic substance emitted by the corpuscles is greatly in excess of what is required in order to combine with the fibrinogen of the liquor sanguinis. This, in fact, is obvious from the fundamental truth that serum expressed from a shrinking clot, when added to hydrocele fluid, induces coagulation. The blood is coagulated already, the fibrin is already formed in it, and yet the serum contains fibrinoplastic substance in solution free to combine with the fibrinogen of the hydrocele fluid. Such being the case, we can readily understand that, in the experiment with the glass tube, the clot first formed, shrinking, squeezes out a little of its serum containing fibrino-plastic substance, and this combining with the fibrinogen of the adjacent liquor sanguinis, fresh fibrin is formed, and the clot goes on perpetuating itself indefinitely, however slowly.

But how are we to explain the non-extension of the clot within the vessels in the cases referred to? How are we to explain the fact that it did not spread from the vicinity of the tight cord in the sheep's foot, and does not extend beyond the vicinity of the wound in the amputated limb? Again, why is it that the coagulum never propagates itself from the wound in the vein after phlebotomy? That wound, intentionally made somewhat gaping, is certainly in the first instance occupied by blood-clot. The equable flow of the venous blood does not disturb it. It is an undisturbed coagulum. But it must often happen that the clot projects more or less into the calibre of the vessel, in which case the blood at its lee side will lie at rest in contact with it. Yet the indefinite extension of the coagulum, which the analogy of the blood in the glass tube would lead us to anticipate, never occurs, and we reckon with confidence on the wound in the vein simply healing without interference with its calibre.

These remarkable differences between the behaviour of a coagulum in a glass tube and within the living vessels may perhaps have light thrown upon them by a fact which I have on a previous occasion brought before the attention of this Society.[11] I first observed it eighteen years ago, in an attempt that I made to obtain pure blood serum from a horse, letting blood, with antiseptic precautions, from the carotid artery into a flask that had been purified by heating it to a very high temperature. To my great astonishment I found that, although the blood of the horse coagulated as usual in the flask, the clot did not shrink in the least.

[7] See Journal of Anatomy and Physiology, vol. xxii., p. 582.

[8] Dr. Freund of Vienna almost simultaneously and independently observed this relation of inert liquids to coagulation. See Jahresberichte für Anatomie und Physiologie, 1886.

[9] The blood in the amputated limb becomes gradually impaired in its coagulating property. A few hours after amputation it is found to clot more slowly than at first when exposed to the influence of ordinary solids, and after some days fails to coagulate at all.

[10] See a paper by the author on the Early Stages of Inflammation Phil. Trans. for 1858, Part II., p. 682.

[11] See THE LANCET, Oct. 25th, 1884 p. 725.

Though I kept it for many days, yet there was not a drop of serum to be seen upon its surface, and the sides of the clot remained in contact with the wall of the flask. This was made particularly striking by the circumstance that masses of aggregated red corpuscles, resembling grains of sand, as before described, were to be seen touching the glass in the lower part of the buffy coat. This, I need hardly say, astonished me immensely, and I imagine it was the first time that a blood-clot was ever seen not to shrink and press out serum.

It seemed scarcely credible that this result could be due to the destruction of micro-organisms in the flask, although the heat had been applied for that purpose. It was suggested to me that perhaps it might arise from some physical change in the glass due to the very high temperature to which I had subjected it. It had been observed by Liebig that, whereas a super-saturated solution of sulphate of soda is, under ordinary circumstances, made to start into a crystalline mass by contact with a glass stirring-rod, no such effect is produced by the rod if it is heated in the flame of a spirit lamp and allowed to cool—a result attributed by Liebig to some temporary physical change produced in the glass by the heat. Might it be, then, that the fibrin of the clot failed to shrink in consequence of a different molecular arrangement assumed under the influence of the glass altered by heat? That view, however, has been exploded, because it has been proved—as illustrated by some striking experiments shown at a conversazione of the Royal Society some years ago by my colleague, Professor Thomson—that the cause of the crystallisation of the super-saturated solution of sulphate of soda is not the contact with the glass as such, but the accidental presence on the glass of minute quantities of sulphates isomorphous with the sulphate of soda; and that the effect of the heat is to drive off the water of crystallisation of those salts and make them no longer isomorphous with it, and therefore no longer able to induce the crystallisation. And so a mystery in physics was cleared away and made a very simple matter. Thus the suggested explanation fell to the ground.

The same absence of shrinking of the clot had been brought about by different means in the example which I exhibited to this Society five years ago. A glass jar, not especially clean, had been purified by means of a solution of corrosive sublimate in 500 parts of water. Blood had been let into this jar from the jugular vein of a horse, under antiseptic precautions, forty-one days before; and the members of the Society had the opportunity of seeing that, just as in the case of the flask subjected to a high temperature, the clot had not shrunk; the serum had not been squeezed out of it. And although it seems unlikely that in the short time that elapses between the shedding of the blood and the commencement of shrinking of the clot, under ordinary circumstances, the micro-organisms present could have had such an influence on the blood, yet when we see that two agencies so different in their nature as a high temperature and a solution of corrosive sublimate, but both powerfully germicidal, led to the same result, one is almost inclined to think that surely it must be so. No other explanation has been offered, although I know that physiologists have been much interested in the subject. If we admit that micro-organisms are the cause of the shrinking of the clot, it follows that a coagulum formed within the body under healthy conditions otherwise, being free from micro-organisms, will not shrink; and, therefore, that the clot, not squeezing out the serum, will not induce coagulation in its vicinity. Fibrino-plastic substance exists no doubt in the serum in the substance of the clot. But the experiments of the late Mr. Graham showed that diffusion of liquids is an exceedingly slow process, even between a strong saline solution and water; and it must be a very slow process indeed between two liquids so nearly allied as liquor sanguinis and serum. I do not say that this is really the true explanation; but it seems to harmonise with the facts.

While an undisturbed clot resembles healthy and active living tissue with respect to coagulation, an injured clot acts in this relation like wounded tissue. And as a coagulum is an exceedingly lacerable and very easily injured substance, we often see coagulation induced by a blood-clot that has been disturbed. This is perhaps most strikingly seen in aneurysm. Let us take, for instance, a traumatic aneurysm. The blood escapes from the wounded artery into the surrounding tissues, and these having been injured, the blood coagulates in contact with them. Every successive portion of blood driven in by the force of the ventricle stretches and lacerates the clot so formed. It is an injured clot, and induces coagulation in its vicinity; and the result comes to be that while, on the one hand, the force of the heart tends perpetually to distend the sac, inferior as it is in elasticity to the walls of the bloodvessels, there is, on the other hand, a constant tendency to deposition of fibrin upon the interior of the sac, as if the blood were whipped, and thus the wall of the sac is perpetually strengthened, exhibiting a counteracting agency tending to recovery.

A beautiful converse of this state of things is presented, as it seems to me, by some cases of varicose aneurysm, such as used to be a not uncommon result of careless venesection. Here the communication with the vein was sometimes so free that the blood driven in by the heart distended the sac comparatively little, so that the aneurysm had no tendency to increase, but was merely a source of annoyance from the purring sensation caused by the arterial blood driven into the vein. And if an operation was performed on such a case, the remarkable fact was disclosed that, instead of the aneurysmal sac being lined with layers of fibrin, it resembled in its interior an artery or a vein.[12] The force of the blood not being able to tell upon the clot and injure it, the clot ceased to induce further coagulation, and became organised and invested with endothelium.

We see the same thing illustrated in the different behaviour of the blood-clot above and below a ligature applied upon an artery in its continuity. When such a ligature was applied in the old-fashioned way in the shape of a silk thread, used without any antiseptic precautions, with the ends left long, it had to come away by suppuration, and there was serious danger of secondary hæmorrhage. But if this did occur, it was commonly not, as might have been expected, from the cardiac side, where the seat of ligature was subjected to the full force of the ventricular contractions, but from the distal side, where the pressure was comparatively feeble. The ligature having been applied sufficiently tightly to rupture the internal and middle coats, there necessarily occurred as an immediate result a certain limited amount of coagulation upon the injured tissues. On the cardiac side, where the force of the blood driven by the heart against the obstruction told powerfully at every stroke, the clot was perpetually disturbed, and infallibly coagulation occurred up to the first considerable branch, that carried the stream away and made further coagulation impossible. But at the distal side, if the circumstances of the anastomosing circulation were such that there was no pulsation, there might be no extension whatever of the undisturbed primary coagulum, so that a mere trace of clot was found on pathological examination.

I have hitherto referred to the view first advanced by myself, and now, I believe, generally accepted, that the fluidity of the blood is not due to an active operation of the living vessels. But I am far from holding the opinion that there is no part of the vascular system that actively opposes coagulation. If transfusion is practised in the ordinary manner, say, by filling a syringe with blood and injecting it into the vessels of the patient, the blood is subjected to the influence of an ordinary solid, which would inevitably induce coagulation within the vessels, unless there were some counteracting influence at work. It is astonishing how very short a period of contact with an ordinary solid determines the mutual reaction of the corpuscles and the liquor sanguinis. Yet no coagulation occurs as the result of such an operation. It is, I presume, in the capillary system that the correcting influence is exerted.

Again, when intense inflammatory congestion is produced by the application of some irritant substance to the web of a frog's foot, we see that the corpuscles, both red and white, adhere to one another and to the walls of the vessels, and block the capillaries. Mechanical violence is one of the many irritating agencies which produce such congestion; and from what we know of the effects of the pressure of the cord upon the vessels of a sheep's foot, we cannot doubt that the blood must be coagulated in the congested vessels; that between the corpuscles there must be cementing fibrin. The distinguishing characteristic of acute inflammatory exudation is of itself pretty

[12] See Syme's Principles of Surgery, fifth edition, p. 140.

clear evidence of this effect. The exudations in intense inflammation differ from those of dropsy by being coagulable. Hence the brawniness of tissues that are intensely inflamed, or the lymph in acute pericarditis. How can this coagulable character of the effused liquor sanguinis be explained except by supposing that the walls of the capillaries have acted for the time being like ordinary solid matter, and that, as a consequence of this behaviour of the capillaries, the corpuscles have given up to the liquor sanguinis (to use Schmidt's language) the necessary fibrino-plastic substance? And if the exuded liquor sanguinis coagulates, we cannot doubt that the plasma which remains in the capillaries is also coagulated. Nevertheless, if the irritant has not been pushed so far as to cause the death of the part on which it has acted, the tissues in due time recover, and we see the corpuscles gradually detaching themselves from each other to pass on into the circulation. And we may surely say that, not only do the corpuscles recover their original non-adhesive character, but the fibrin which binds them together is redissolved.

I believe, therefore, that although in the larger vessels the vascular walls are negative as regards the coagulation of the blood, in the capillary system there must be potent agencies counteracting any tendency to clotting induced by abnormal conditions, and capable even of redissolving fibrin.

THE

DIFFERENTIAL DIAGNOSIS AND PROGNOSIS OF TINNITUS AURIUM (NOISES IN THE HEAD AND EARS).

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IN a communication made by me last year on the etiology of tinnitus, based on a classification of 260 cases, I endeavoured to support the following etiological classification on anatomical and physiological grounds.

Class 1.—Impulses originating in the temporal lobe, or superior temporal gyrus, the cerebellum, or the auditory nuclei (in the medulla or pons), and referred as impressions to various situations, as the labyrinth or certain parts of the head. Such acoustic impressions may or may not be attended by deafness. These impulses may be associated with lesions in these areas—as tumours, apoplexies, effusions, thrombi, or possibly lesions in the adjacent portions of the occipital or parietal lobes. Such impulses may result also from reflected irritations of any of these parts.

Class 2.—Impulses due to irritation direct or reflected in any portion of the auditory nerve. This latter would include hyperæsthesia, atrophy, sclerosis, traumatism, vaso-motor (dilator or constrictor) effects, morbid blood-supply to the nerve, as in uræmia, anæmia, or the circulatory changes which occur during pregnancy. These latter causes may also operate under Class 1

Class 3.—Impulses originating in the peripheral ends of the auditory nerve, due to: (*a*) Increase or diminution of labyrinthine pressure, increase or diminution of, or encroachment upon, the perilymph or endolymph from abnormal pressure on either of the fenestræ. This latter cause would include rigidity of the membrane of the round opening and fixation of the stapes against the oval opening. (*b*) Vascular changes—increase or diminution of blood-pressure, frequently associated with cardiac disease—hyperæmic, anæmic, or toxæmic states of the blood circulating in the labyrinth; apoplexy and extravasations. (*c*) Morbid nerve conditions—hyperæsthesia, paresis (organic or functional), atrophy, sclerosis, traumatisms. (*d*) Rheumatic, gouty, or syphilitic states of the walls and vessels of the labyrinth. (*e*) Reflected disturbance through the spinal cord or cerebro-spinal nerves, as occurs in uterine disorders, pregnancy, gastric derangements, gout, disorders of the liver, flatulence, spinal neuroses, dental, nasal, and ocular irritations involving the fifth and facial nerves.

Class 4.—Irritations arising from interferences with the intra-tympanic muscles—tensor tympani and stapedius. Such interferences would include any spasm of these muscles—abnormal changes in the membrana tympani or the mucous membrane of tympanum—reflex irritation transmitted from the facial or trigeminal nerves.

Class 5.—Irritations transmitted by altered conditions of equilibration of the air in the tympanic cavity. This would include enervation of the tubal muscles of the Eustachian tube, and altered relations between the air in the tympanic cavity and the blood in its vessels or those of its membrane; also pathological states of the membrane.

Class 6.—Irritations due to disease in the middle ear and labyrinth. This would embrace atheromatous changes in the arteries, aneurysmal dilatations, blood extravasations, venous congestion within the lateral sinuses, disease of the mastoid cells, and disease of the petrous portion of the temporal bone, exudations, and tumours.

Class 7.—Irritations arising in the external ear, including inflammation and abscess, ceruminous collections, eczematous inflammation, exostosis and hyperostosis, othæmatoma, foreign bodies. Some of these causes act by direct irritation of the nerves supplying the external auditory meatus or tympanic membrane, as in inflammatory attacks and exostosis, others, as cerumen or foreign bodies, by the influence they exert on the sound waves, or by the pressure due to their presence on the membrana tympani, and thus conveyed to the ossicles and labyrinth.

Class 8. — True aural hallucinations — subjective impressions arising in the psycho-sensorial brain centres and having no objective cerebral or aural source of origin. Such hallucinations may become insane hallucinations. The latter may be divided into two distinct forms. (*a*) Hallucinations which arise subjectively in the brain when the aural apparatus and auditory nerves are healthy. (*b*) Hallucinations which are scondary to objective changes in the aural apparatus and in which a tinnitus is developed that leads up gradually to a fixed illusion.

Class 9.—Therapeutical causes of tinnitus aurium. The action of such drugs as ergot, nitro-glycerine, alcohol, ether, quinine, salicine, caffeine, apomorphine, nitrite of amyl, tobacco, iodine, iodoform, chloride of barium, digitalis, convallaria, atropiæ, veratrin, duboisin, gelsemin, jaborandi, pilocarpine, monobromide of camphor, hydrobromic acid. Some of these drugs may act by direct stimulation of the auditory nuclei in the medulla, as caffeine, gelsemin, iodoform, salicin, and quinine; others, as digitalis, jaborandi, nitrite of amyl, chloral hydrate, by their action on the vaso-mortor centre; others, as quinine and digitalis, convallaria, by their secondary effects on the auditory circulation through their action on the heart.

I desire to supplement this classification by adding a few observations on a differential diagnosis on the lines above laid down. It is difficult in many cases to do this accurately and with confidence, but in a very large number of patients we can come sufficiently near the reference of the individual case before us to a special class, or it may be the borderland of two distinct classes of tinnitus, to enable us to give a correct prognosis of the chances for or against recovery, and to indicate the correct line of treatment to be pursued. To return to the etiological classification I have tentatively laid down, we may summarise the clinical evidence on which, after a careful examination, we are enabled to include a particular case under any of these heads.

Class 1.—Most of those who would come under this class are likely to have some evidence of the implication of the other nerves of sense in reflex disturbances, in muscular paresis, cutaneous anæsthesia or hyperæsthesia, or in oculo-motor symptoms and pupillary changes. Such causes as apoplexies, effusions, thrombi, or cerebral lesions, acting by inhibition, are most likely to reveal themselves in objective signs in the parts in correspondence or associated with these cerebral centres. It is probable that in such reflected excitations we have an explanation of a tinnitus without deafness, as in cases of dental caries, dental periostitis with neuralgia, spinal tabes, uterine disorders, as versions and flexions, and in the functional sexual disorders of the menopause or pregnancy (though in the latter it is more often to be attributed to arterial tension and hæmic changes).

Class 2.—We may expect to find similar symptoms to those referred to in Class 1 with more direct evidence of a lesion or excitation in the auditory nerve itself. In hyperæsthesia, the hyper-sensitiveness and pain attendant upon certain sounds, though there may be normal acuteness of hearing; in traumatism, the history of some injury, as a blow on the ear, a railway collision, a nasal fracture; in sclerosis and atrophy, the absolute deafness and the negative response to the watch or tuning fork, even by conduction, added to the history of pre-existing aural symptoms and

progressive deafness or possibly vertigo; in irritation of the vaso-motor centre, vaso-motor disturbances of the labyrinth due to reflected excitations arising in the spinal cord or in the nuclei or branches of the fifth nerve, with all such evidences as spinal neurosis, spinal and ganglionic irritation, oculo-motor symptoms, visual disturbances, gastric crises, headache, possibly thyroid changes, flushings of the face, dental neuralgia and associated dental affections, as in eruption of the wisdom teeth, eruption of ocular and laryngeal migraine.

Urine of low specific gravity, with a radial pulse of high tension, albuminous urine or that charged with excess of uric acid, the characteristic uræmic complications with the associated altered blood of pregnancy, require only to be remembered as coming under this class to secure their detection on examination.

In Class 3 we confront more clearly local causes of the tinnitus. Such peripheral auditory nerve excitations are usually associated with some abnormal states of the middle ear or the membrana tympani. These, in a case of diminution of labyrinthine pressure from changes in the perilymph or endolymph, with accompanying rigidity of the round membrane or fixation of the stapes, have most frequently as their consequences tinnitus, deafness with vertigo, and often nausea. The ossicula frequently are involved, the joints are ankylosed, the membrane is fixed, its pockets are altered in shape; the malleus is sharply defined, or if the case be an old one its head alone is visible, the normal division of the membrane into pockets is absent, the pyramid of light is either blurred or imperceptible, and the membrane may have lost its translucent look. But at other times this is not so, and though there is clear evidence from the tuning fork, watch, and acoumeter that the auditory nerve is affected, the membrane preserves its translucency, and there is but little deviation from the natural appearances. Then there are the cases in which the hearing distance is normal or a fair degree of hearing is preserved, and still we have tinnitus, and possibly vertigo superadded. There may or may not be local evidences of gross middle ear changes. We at once suspect vascular tension, increase or diminution of blood pressure, and we search for evidence of organic cardiac changes or altered states of the circulatory fluid in anæmic or hyperæmic conditions. This suspicion may be verified by the discovery of a feeble systole, the presence of a cardiac murmur, or valvular disease. The urine requires to be carefully tested, and such toxic states as are likely to influence vascular tension may be detected. Such toxic or hæmic sources of tinnitus are frequently the forerunners of deafness, and the occurrence of Ménière's symptoms, following on extravasations and apoplexies. Aural vertigo rarely occurs without the associated "noise in the ears." The first attack may occur suddenly and without previous warning, but generally there has been some pre-existing tinnitus with impairment of hearing.

Class 3.—Peripheral lesions in the labyrinth are often attended with loud noises, and not infrequently the patient will describe two or three different kinds of noise, one of which is a musical tone or note. But we look in vain in these cases, as distinguished from those in Classes 1 and 2, for any evidence of serious cerebral complications or such causes as uræmia, anæmia, or pregnancy. Gout and rheumatism occasionally may cause tinnitus; but this symptom is associated with evidence of gouty changes in the meatus or on the membrane, and the uric-acid diathesis is manifested by the evidences of gout elsewhere in the body, and the presence of free uric acid in the urine. A pasty meatus, shedding of epithelium, and possibly a slight discharge, are often seen in such gouty cases. Also, we may find on inspection that some cretaceous deposits have occurred, which are seen as irregular white coatings on the membrane. Such cretaceous masses I have frequently observed in gouty patients.[1] I must say that in my experience I have rarely found tinnitus and deafness arising from changes in the middle ear as a result of acquired syphilis. This is not so true in the case of the labyrinth. If they are caused by specific disease there are other signs of syphilis present, most probably in the skin or palate and pharynx, or the nose, and there is the history of a past syphilitic attack. Mere reflected disturbances of the labyrinth, which arise in uterine disorders, during pregnancy, in various forms of dyspepsia, hepatic congestion, flatulent distension of the bowel, or in various visceral neuroses, obviously form but one of the groups of symptoms which are met with in such conditions. More particularly has it to be remembered that tinnitus has its possible origin in dental irritation, in astigmatism and associated asthenopia,[2] in nasal turbinate abnormalities, since such starting points of excitation are specially apt to be overlooked. This remark applies more particularly to the nose. In every case of tinnitus the septum and turbinate bones have to be carefully explored. In many instances it will furnish an explanation of the aural condition.

Class 4.—Here we realise a source of tinnitus which has its direct origin rather in a muscle than in a nerve. Obviously any abnormal action of the tensor tympani or stapedius, causing increase or diminution of pressure and alteration in the equilibration of the labyrinthine fluid, may start a tinnitus. Remembering this, we must not omit to seek for the starting point of the mischief in some direct or reflected irritation in the facial or fifth nerve. It is not necessary in such cases that we should find any indication of an affection of the middle ear or the labyrinth. Thus the hearing may be but slightly affected, or, on the other hand, the influence on the muscles may be caused by gradual changes in the mucous membrane of the tympanic cavity and the ossicular ligaments, with accompanying changes in the mobility, position, shape, and consistency of the membrane. If these latter are present they will be visible with the speculum.

Class 5.—In this class we find the commonest causes of tinnitus, both with and without deafness. Both in this and in the last group we may have, in the tympanic membrane, in displacement and obliteration of its segments, rigidity and immobility, or in varying degrees of collapse (the consequences of chronic catarrhal attacks), evidence of gross changes in the middle ear, which are associated with ankyloses of the ossicles and fixation of the stapes. The patient will often complain of inability to join in general conversation in society, may hear better in a railway train, or omnibus (Paracousis Willisii) and cannot synchronously distinguish two distinct tones, as, for instance, the ticking of two clocks in the same room. On watching the membrane when Valsalva's method is practised, it may not in the least, or but very slightly, yield on inflation. The cone of light is but little altered, or we may detect but the slightest movement of either pocket with Siegle's speculum. On the other hand, the membrane may appear thinner than normal, the malleus may be altogether displaced, so as to give the appearance of one large pocket which is blown bladder-like out on inflation. But it by no means follows that such pathological signs must be present, even though there be considerable impediment in the Eustachian tube from imprisoned secretion, collapsed walls, stenosis, or obstruction from other cause. Slight deviation from the normal position and translucency of the membrane may be detected, but it is only on listening with the otoscope (auscultation tube) to the inflation of the tympanum, and by careful observation of the membrane through Siegle's speculum, that we are enabled to discover obstruction or collapse of the Eustachian tube. Examination of the nose and throat may give the clue to the interference with the tympanic ventilation. In the nose, spurs or deviation of the septum, enlarged turbinates, hypertrophic mucous membrane, polypus, rhinolith (both the latter rarely); in the throat, relaxed and feeble palatal muscles, congestion of the palato-pharyngeal mucous membrane (with probably elongated uvula), tonsillar hypertrophy, adenoid growths, are among the more frequently occurring and accompanying conditions which explain the Eustachian interferences and account for the altered relations of the air in the tympanum to the blood in its vessels, as well as the pathological conditions of the vessels themselves.

Class 6.—I have included under this head those more serious middle ear complications which follow upon disease of the arterial tissues—local apoplexies, extravasations of blood, lymph exudations, congestion of the venous sinuses, arising from pressure or in cardiac diseases. To it also we refer those noises arising from obstructed pulmonic circulation and deficient oxygenation. There are those more serious inflammations of the mastoid and petrous portions of the temporal bone which lead to both exudations and suppuration. The recognition of such states is not generally

[1] Atlas of Diseases of the Membrana Tympani. J. & A. Churchill, London.

[2] Paper by the author on Dental Reflexes: Dental Record, August, 1890.

difficult. A careful examination of the tympanum with the speculum, showing possibly intra-tympanic growths, granulations, or polypi, and the presence of a fetid discharge will at once arouse suspicion of a deeper-seated cause for the pain, giddiness, or tinnitus than that recognisable with the speculum. Pain, tenderness, and fulness over the mastoid, with projection of the auricle, will generally be present when there is threatening of mastoid abscess; pain more violent and diffused over the head, possibly pupillary changes, optic neuritis, tendency to delirium and secondary lung complications, if the disease has extended deeper and has involved the petrous portion of the temporal bone, or has possibly implicated the lateral sinews.

Class 7.—The causes of tinnitus included in Class 7 are easily discovered, and hence the greater need for their being the first sought for and not overlooked. It may not be amiss to say a few words on each of these outer ear sources of tinnitus. Inflammation and abscess are easily recognised by the local symptoms of pain, severe heat, throbbing, swelling, and occlusion of the meatus, tinnitus and deafness. Such inflammation and abscess may lead to inflammation of the membrana tympani and perforation of it. These acute perforations are frequently attended by severe pain and loud tinnitus. They may occasionally be seen, if viewed through the speculum, to pulsate. Dead débris of purulent collections, epithelium, or cerumen, is apt to be left behind and cause chronic irritation in the ear passage, and may possibly lead to the occurrence of aspergillus or perforation of the membrane. A persistent tinnitus may be the consequence, which a little local attention will remove. Eczema of the meatus, especially of the gouty type, which is started by irritation of its walls, may be the sole cause of the tinnitus, and is frequently incurred by the entanglement of the desquamated particles of cuticle in cerumen and discharge which clog the lumen of the meatus and impinge on the membrane. Both exostosis and hyperostosis may set up a tinnitus by the irritation they cause. But it is rare to find these as a sole cause of tinnitus, and they are frequently present without it. More often we can trace the occurrence of the noise to associated middle-ear catarrhal conditions, a gouty diathesis, or some Eustachian obstruction. In gouty patients there is at times a distinct neurotic exaggeration of symptoms, which includes a dwelling on, and morbid apprehension of, any tinnitus that may be present. Over-indulgence in alcoholic drink, and, possibly, excess of tobacco-smoking, contribute to increase the loudness and intensification of such noises. It is necessary to refer to othæmatoma (insane ear) as a cause of tinnitus, inasmuch as its etiology and pathology demand separate treatment.

Class 8.—Of the therapeutical sources of tinnitus, the only one I propose to delay over is quinine. That a temporary tinnitus, deafness, and giddiness follow on the prolonged use, or larger doses, of quinine is well known. At times this amounts to that condition known as "quinine intoxication." Burnet insists, and with this view I quite agree, that in most of the cases in which any permanent effects have been noticed as following the use of quinine there have been other causes present quite sufficient to account for the tinnitus or deafness independent of the quinine. Still, the fact that quinine can produce aural disturbances of function, and that many of those who have taken quinine in large quantities complain of tinnitus and deafness, added to the possibility of its producing a congestive state of the vessels of the labyrinth, independently of its irritating effect on the hearing centre, is sufficient to point to quinine as a probable and predisposing cause of tinnitus.

PROGNOSIS.

It has to be confessed that in the present state of our knowledge it is difficult, in defining the grounds on which we arrive at a prognosis in cases of tinnitus aurium, to follow the lines of the classification that has been suggested. Yet that attempt at a differentiation of the causes of tinnitus may be of use in confining the proposed therapeutical steps to certain clinical and pathological conditions which may justify us in hoping for relief, if not cure, following on their treatment. 1. We may, in the first place, fairly exclude from the category of curable cases those noises which attend on cerebral tumours, lesions, apoplexies, and degenerations which are secondary to the occurrence of thrombi. It is, however, conceivable that certain cerebral effusions may yield to time and such special remedies, as, for instance, iodide of potassium and mercury. 2. Atrophy, sclerosis, and traumatic lesions of the auditory nerves. 3. Rigidity of the membrane of the round opening, and fixation of the stapes against the oval opening. 4. Extravasations in the labyrinth. 5. Organised effusions in the labyrinth. 6. Traumatism of the labyrinth. 7. Rheumatic, gouty, and syphilitic degeneration of the walls and vessels of the labyrinth. 8. Organic changes in the periphery of the auditory nerve. 9. Certain chronic and irremediable conditions of the intra-tympanic muscles, leading to atrophy, rigidity, or spastic contractions. 10. Many cases of chronic catarrhal inflammation, with corresponding and evident changes in the tympanum, in which a considerable degree of deafness attends on the tinnitus, and in which there is a history of progressive deafness extending over a considerable time, with possibly hereditary deafness in the patient's family. 11. Permanent closure, on occlusion of the Eustachian tube, may be included under this head. 12. Many cases of chronic Ménière's affection (true labyrinthine vertigo) in which, after the more acute symptoms have subsided, there still persists deafness, occasional attacks of migraine and tinnitus. 13. Tinnitus consequent upon aneurysmal conditions of the auditory arteries on atheromatous changes in their tissues. 14. Exudations and tumours of the mastoid cells—say, of a syphilitic and gummatous nature,—or disease of the petrous portion of the temporal bone consequent upon chronic suppurative catarrh of the tympanum. 15. Distinct aural hallucinations attendant upon or following gross changes in the middle ear and labyrinth.

Turning now to those cases in which we may hope for amelioration, if not complete cure of the tinnitus, we may thus classify them:—1. Tinnitus arising out of any reflected local or systemic irritations of the auditory centre or auditory nerve, which are due to deficient morbid blood-supply, or vaso-motor disturbances in the auditory areas. 2. Tinnitus arising out of simple primary hyperæmia of the labyrinth or a hyperæmia which is secondary to certain fevers as intermittent fever, puerperal sepsis, so-called "cerebral" fever, and the continued fevers. 3. Tinnitus consequent upon temporary alterations of the labyrinthine equilibration, whether due to altered conditions of tension of the fenestræ or increase or diminution of blood pressure, and frequently associated with cardiac functional disorders; simple hyperæsthesia acoustica. 4. Tinnitus which has its origin in rheumatic, gouty, and syphilitic conditions, whether in the labyrinth or middle ear; in the uræmia of pregnancy or Bright's disease. 5. Tinnitus due to abnormal states of the intra-tympanic muscles, as enervation, spasms, altered muscular tension (from defective middle ear ventilation and equilibration), producing conditions and positions of the membrana tympani and accompanying deviations in the normal relations of the ossicles, which have their consequent effects on the labyrinth through the fenestræ. 6 Tinnitus arising out of enervation of the tubal muscles of the Eustachian tube, collapse and closure of the walls of the tubes, temporary obstruction of the tubes from catarrhal conditions of the mucous membrane, or accumulation of mucus in the tube. 7. Tinnitus arising from irritations in the external ear. 8. Tinnitus arising from therapeutical causes. 9. Aural hallucinations which occur independently of any acoustic or cerebral trouble, and which may be associated with visceral or pelvic neuroses. Such hallucinations, if they become insane hallucinations, disappear with the mental alienation.

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KOCH'S TREATMENT AT THE ROYAL NATIONAL HOSPITAL FOR CONSUMPTION, VENTNOR.

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FOR some time past, unfortunately, the very justifiable enthusiasm, or, as others put it, "the outburst of feeling uncontrolled by reason," with which Koch's great discovery was received, has been followed by a reaction as unwise as it is regrettable. The principal contributory causes of this change are not difficult to recognise, although it must be conceded that this therapeutic method has not realised all

that was anticipated of it, even by Koch himself. It is, however, both unscientific and unreasonable, because success does not come up to first expectations, to decline to accept any portion of what value remains. Neither the profession nor the public, in the wave of excited expectation by which both were carried away, halted to distinguish between the precise and cautiously guarded statements of Koch and those hazarded by irresponsible enthusiasts in his name. Koch, however, evidently realised his position, for he expressly stated in his well-known "Weitere Mittheilungen" that from the premature publication of his method many important questions must be left open; and he also says, "I would earnestly warn people against a conventional and indiscriminate use of the remedy in all cases of tuberculosis"; and further on, "In all forms of tuberculosis medical art must have full sway by careful individualisation, and making use of all other auxiliary methods to assist the action of the remedy." Nothing can be more cautious than his statement of the comparatively limited scope of his remedy in pulmonary tuberculosis. From the necessarily incomplete state of his investigations at the date of their announcement, it happened that the potency of the remedy itself was under-estimated, and that the therapeutic significance of the so-called reaction was erroneously appraised. We have learned that the dose of the now called tuberculin has been much too large, too rapidly increased, and too frequently repeated, and that the intensity of the reaction should not be regarded as the measure of benefit derived from the inoculation.

I was painfully struck with the physical suffering exhibited during and the extreme prostration following the excessive reactions I saw in Berlin. The heavy draft on the constitutional powers involved in the repeated production of these high temperatures must necessarily tend to lower still further that already deficient vitality of the tissues, which has in the beginning permitted the inception of tubercular degeneration. My own experience in the accompanying, as also in a larger number of private cases, has convinced me that the best results have been attained when the temperature of reaction is not allowed to exceed 100°F. The pathological significance of the so-called secondary reactions claims brief attention. Should they not be regarded as the expression of a secondary infective process, resulting from the absorption of a larger amount of septic material liberated at the seat of disease under action of the tuberculin than the system can tolerate? They would seem to indicate that the dose of tuberculin in the first place was too large, and that a greater time should elapse between each inoculation. In this connexion the necessity of anticipating or reducing this secondary infective process suggests itself, if only we could sterilise the blood and the tissues through it, by introducing into the system, either by the mouth or by inoculation, a sufficient quantity of some otherwise innocuous material for this purpose. This subject has long engaged my attention, and I have found in guaiacol, especially when used hypodermically, as first suggested to me by my friend Dr. Shetilig of Nervi and Homburg, results of the most encouraging character. In some cases of pulmonary tuberculosis in my private practice, more advanced than I felt justified in treating among my earlier hospital patients, I have prefaced Koch's treatment with daily inoculations of pure guaiacol, in doses, according to tolerance, of from 5 to 15 minims, until the system was saturated, as shown by the taste of the remedy being recognised by the patient, and I have also been able to reduce the secondary reactions, even when they assumed the regular hectic range, by intermediate inoculations of the same material, and this in some instances with most encouraging results. These cases I hope shortly to publish.

In submitting the following report of ten cases of pulmonary tuberculosis treated by Koch's method in the Royal National Hospital, Ventnor, I beg to express my indebtedness to Dr. Hawkes and Dr. Wood, the resident and assistant resident medical officers, for the assiduous and sustained attention with which the cases were observed by them, and for the full and accurate records they kept during the whole period of treatment. My colleagues, Drs. Robertson and Whitehead, assisted me in the selection of the cases, and we kept in view the desirability of choosing such as would be fairly representative of the different stages of phthisis, but as much as possible uncomplicated by other grave diathetic lesions. Observations of temperature, pulse, and respiration, and other details, were taken every three hours, and recorded carefully at the time. Sphygmographic tracings of the pulse were also regularly taken before, during the height of, and after the reactions. Careful instructions as to regimen &c. were carried out, so that the patients were placed under the most favourable conditions for treatment as well as for observation. All the patients had already been a sufficient time in the hospital, not only to allow of their idiosyncrasies, physiological and pathological, being ascertained, but to admit of fixed points of departure being determined for comparison between the effects of the general treatment, to which they had been previously subjected, and the new method to which they were now submitted, for the direction of which I am solely responsible. In carrying out this treatment, I scrupulously endeavoured to follow in every detail the instructions laid down by Professor Koch in his "Weitere Mittheilungen" of November, 1890, aided by such valuable lessons as I was able, through the generous courtesy of my distinguished professional friends in Berlin, to learn, during my too brief visit to the hospitals and private clinics of that city in December of last year, when experience of the method had attained some maturity, and a calmer and more rational judgment was being brought to bear on its study. It is to be hoped that still later experiences, which may now be brought forward, will help further to determine the true therapeutic value of Professor Koch's remedy. The statistics published in the "Official Report on the Results of Koch's Treatment in Prussia" cannot be otherwise than fallacious for this purpose. It refers for the most part only to cases treated down to the end of 1890, during a period when the properties of tuberculin and the method of employing it were comparatively unknown, and both therefore were passing through the precarious process of experiment. These cases of course include a very large number, complicated with other grave diseases, which should never under any circumstances have been submitted to this, or indeed to any other active treatment with any prospect of success; others in which tuberculosis was far too extensive or too advanced, and the constitutional powers too reduced, to be suitable for inoculation; and, thirdly, many in which the excessive doses employed exercised an unfavourable, or even a disastrous, effect. The treatment of the following cases was undertaken just at the time when the safety of the tuberculin inoculations had been so gravely impugned by the alarming statements of Professor Virchow, and were not intended to determine the full therapeutic scope of the remedy. I would refer with due respect to any opinion expressed by the greatest pathologist of the age; but I cannot understand how such disastrous results attributed by him to the lethal energy of the lymph should have been observed in so comparatively small a number of instances among the many hundreds of patients who were subjected to the same treatment under similar circumstances concurrently in the Berlin hospitals.

CASE 1.—Marion H——, aged thirty-six, single; admitted on Dec. 1st, 1890. Father and one sister died of phthisis. In the autumn of 1888 her health began to fail, feeling weak and languid. Cough, which had been troublesome previously, became persistent in August, 1889, with much frothy expectoration. In February, 1890, she had what she calls "bronchitis," with dyspnœa, pain in left shoulder and back, with blood-stained sputum. She lost flesh, but there were no night sweats. These symptoms continued. Condition before inoculation: Height 5 ft. 4 in.; weight 7 st 3 lb. 8 oz. Anæmic; flatulence and pain after food; appetite good. Menstruation regular. Urine: sp. gr. 1016; phosphatic deposit; trace of albumen. Pulse 92 (regular and soft). Heart sounds normal. Breath-rate 28. Physical signs in lungs: Right, anteriorly percussion note impaired at right apex to third rib, and posteriorly to angle of scapula. Left lung: Expansion defective anteriorly; impaired percussion note, with scattered crepitations to margin of third rib. Amphoric breathing above clavicle. Posteriorly corresponding indications, with large coarse crepitations to base. The patient was inoculated with 0·001 grm. of tuberculin at 10.35 A.M. on Dec. 27th, 1890. Reaction commenced at 3 P.M., with headache, pains in back and thighs. Rigors at 8 P.M.; hands and feet cold; vomiting of frothy mucus at 9 P.M., when highest temperature (102·8°) was reached. The pulse rose to 120, and the breath-rate to 30. Next morning (28th) "felt comfortable." Urine contained no albumen. Crepitations were detected in dull area of right lung both in front and behind. In the left lung crepitations were present from apex to base.

Expectoration greatly increased. On the 30th the chest sounds were much drier, and cleared up over both lungs posteriorly. On Jan. 5th, 1891, large patch of herpes appeared round the right angle of the mouth. Another patch appeared on the 22nd. The patient appears to have been suffering from catarrh, now developing. The expectoration has varied from an ounce and a half to two ounces in twenty-four hours. The chest, back and front, was rubbed with equal parts of lin. crotonis co. and lin. acet. terebinth., until a large pustular rash was produced, which greatly relieved the symptoms. The highest temperature reached was 104·3°, on Jan. 19th, from an inoculation while menstruating of 0·005 grm. There was great dyspnœa, the expectoration was 2½ oz, smelling offensively. To April 3rd there were eighteen injections, the largest 0·08 grm. The total amount of tuberculin injected was 0·442 grm. The subsequent reactions were much milder in character with very little distress, and since the inoculation of 0·03 grm. on Feb 14th there have been no reactions, although the dose has been increased to 0·08 grm. Present condition, April 14th, 1891: Weight, 7 st. 9 lb., a gain of 5 lb 8 oz. Right lung, anteriorly, note not impaired at apex, the breath sounds are rough, with occasional dry sibilant rhonchi; posteriorly the same conditions to angle of scapula. Left lung: Anteriorly movement impaired, with slight flattening over upper half, note impaired from apex to cardiac dulness. Cavernous breathing and whispering pectoriloquy above the clavicle, with rough inspirating murmur and frequent sonorous rhonchi below. Posteriorly percussion note slightly higher in pitch than over the right side, the respiratory murmurs exaggerated with occasional rhonchi. The second cardiac sound is accentuated in all areas, and very slightly reduplicated. The expectoration has much lessened in quantity, and seems to consist of frothy bronchial mucus. The patient's condition is greatly improved, and she is no longer anæmic. She feels stronger and much better. The case seems to have been one of chronic catarrhal pneumonia in which secondary tubercular changes progressed to cavitation at the left apex above the clavicle. Whether the tubercular character of the case has been effectually and permanently altered time alone can decide. There can be no question of the improvement, both in subjective and objective symptoms, effected under Koch's method.

CASE 2.—Ellen S. J——, aged twenty-four; married two years, one child; florid complexion, dark hair; teeth very defective and decayed; height 5 ft. 3½ in; weight 8 st. 5½ lb. Admitted Oct. 27th, 1890. Mother (still alive) has had hæmoptysis. Subject to colds; discharge from ears since measles in childhood. Four years ago her health began to fail, during which time she has lost 2 st. 11 lb. Had cough, which became worse after her confinement, with thick yellow expectoration. Three or four months ago had profuse night sweats. Condition before inoculations: Appetite not good, cough very troublesome, and the expectoration (yellow and nummulated and blood streaked) amounts to two ounces a day. Menstruation scanty; she suffers from leucorrhœa; urine, sp. gr. 1012, acid, no albumen. Pulse 84, regular, full, and compressible; respiration 18 per minute. Physical signs in lungs: Right, anteriorly flattening at apex; note impaired; expiration prolonged, and vocal resonance exaggerated to second interspace; cavernous breathing and pectoriloquy below clavicle; corresponding conditions posteriorly, with sonorous rhonchi at base. Left lung: Anteriorly movement deficient at the base; expiration prolonged and vocal resonance increased above the clavicle. Posteriorly note impaired below angle of scapula; scattered crepitations at base, with feeble breath sounds; vocal fremitus diminished. The patient was inoculated with 0·001 grm. of tuberculin about 10.30 A.M on Dec 27th, 1890. Maximum temperature only 99·2° at 6 P M Cough and expectoration much increased. Next day the urine was alkaline and contained phosphates. Moist crepitations heard at right apex anteriorly and in interscapular region. Crepitations heard over the whole of the left lung behind, more numerous towards the base, also a few rhonchi at the apex and base in front These conditions repeated themselves in a less degree after each subsequent inoculation. This patient was usually very drowsy after injection, and slept better the same night. The expectoration showed the effect of the inoculations, often amounting to a drachm and a half during the subsequent twenty-four hours, and then dropping to *nil* within the next two days. Twenty inoculations were given to March 24th, gradually increased to 0·08 grm., equal to 0·4235 grm. of tuberculin. The highest reaction the eighth. Temperature 104·2° was recorded on Jan. 17th. The previous inoculation on the 12th was 103·6°. On two subsequent occasions only, even with increasing doses of lymph, did the temperature of reaction reach 100°. Condition on leaving: Weight 9 st. 4 lb. This gain was continuous, and amounts to 21 lb. since the first inoculation. She looks and says she is exceedingly well; she has no cough and hardly any expectoration; only one somewhat doubtful bacillus could be found in the last sputum examined. There is no dyspnœa or night sweats; appetite good; no dyspepsia; sleeps well. Menstruation has become normal. Pulse 70 to 80. First cardiac sound reduplicated in mitral area. Right lung: Depression in supra-clavicular region, but expansion fairly good at apex. The vocal fremitus is slightly exaggerated under the clavicle; the note is impaired to the second rib. Breath sounds somewhat muffled. Resonance increased and pectoriloquy. At the extreme base in the anterior axillary line the breath sounds are indistinct, and a few scattered crepitations are heard along the inferior margin of lung. Left lung: At the apex the note is markedly affected, but there is prolonged expiration and increased vocal resonance to the second rib. The chest movement is defective, and there is dulness on percussion, and at the end of the deep expiration crepitations are heard at the base. Posteriorly crepitations are audible below the spine of scapula, increased by coughing.

CASE 3.—Annie W——, aged twenty seven; married at twenty-four, and has one child. Tubercular diathesis; anæmic, and inclined to low spirits; height 5 ft. 5¾ in.; weight 8 st. 8 lb. 12 oz. Admitted 17th Dec. 1890. Always delicate, and had slight cough from childhood. Was in bed three weeks with an attack of hæmoptysis ten years ago. Fourteen months ago cough became worse, with yellowish expectoration, occasionally blood-streaked. Had pain in both apices, especially the right, and also dyspnœa. Has no night sweats now, but has lost weight. Menstruation normal. Thyroid enlarged. Urine, sp. gr. 1010, neutral reaction, phosphates on boiling, no albumen. Pulse 104, regular but small; first sound in mitral area reduplicated and accentuated, and systolic bruit in pulmonary area. Respiration 24 per minute. Chest boat-shaped. Physical signs in right lung: Anteriorly flattening with cavernous breathing under clavicle. Note impaired to nipple; no moist crepitations were now present. Posteriorly note impaired to lower angle of scapula, with prolonged expiration and increased vocal fremitus. Left lung: Flattening under clavicle, note impaired to cardiac dulness; exaggerated expiration over the whole lung but no moist crepitations; expectoration. The patient was inoculated with 0·001 grm. of tuberculin about 10 A.M., Dec. 27th, 1890, the maximum temperature being 99·2° at 9 P.M. To March 16th, 1891, seventeen inoculations were given, gradually increasing to 0·07 grm., equal in all to 0·3315 grm. of tuberculin. The highest temperature of reaction was 104·2° on Jan. 17th from 0·005 grm. of the lymph. The maximum temperature was reached at 6 P.M. on thirteen, and at 9 P.M. on four, occasions. On Feb. 15th the sputum showed numerous leucocytes, in some of which apparently bacilli were being absorbed. In the course of the treatment moist crepitations with increased expectoration of frothy character followed some of the reactions, and pain in the joints, especially of the lower extremities, with headaches were developed. Condition on leaving, March 23rd: Weight 9 st. 4 lb. 2 oz, a gain since commencing treatment of 10 lb. 9 oz, and a total gain of 12 lb. 10 oz. on lowest weight recorded (Jan. 11th). Patient says she never felt better in her life, and has very greatly improved in appearance and condition. Physical signs: Heart first sound reduplicated in pulmonary area with second, short, flappy, and accentuated. Right lung: anteriorly movement deficient at right apex. Note slightly dull to second rib; expiration prolonged, and vocal resonance increased to third rib. Amphoric breathing under clavicle. Posteriorly dulness to spine of scapula, with amphoric breathing in supra-spinous fossa. Left lung: Anteriorly note slightly impaired under clavicle. A few superficial dry crepitations can be heard at extreme right base; removed by coughing. No cough; expectoration very scanty, containing a few stunted bacilli. This patient was examined in London on April 7th by a distinguished physician, who had reported on her case on Nov. 11th, 1890. He states that there was "a wonderful change" in the condition of her lungs.

(To be continued.

ABNORMAL ANUS AND INTESTINAL FISTULÆ.

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I FIND that students and many qualified men have hazy notions as to the precise meaning of the term most commonly used in our text-books—viz., "fæcal fistula"; and in looking over most of the larger and smaller works on surgery and on rectal and intestinal surgery this want of clearness on their part is easily explained, for the subject, important though it be, has not been thought, apparently, of sufficient interest to necessitate clear definition and discriminating exposition. I propose, as briefly as possible, to endeavour to methodise our ideas, and to arrange and define these maladies on the basis of pathological anatomy and clinical experience. I admit that the difference between an intestinal fistula and an abnormal anus is frequently but one of degree, yet it will be found that for the practical purposes of the surgeon it is highly important to differentiate them according to the various conditions which have been met with during operations or at post-mortem examinations. The subject is becoming one of the surgical questions of the day, as the success of modern methods of operating on the intestines will embolden surgeons to deal much more successfully with these conditions than has hitherto been the vogue. In fact, these infirmities have been regarded to a large extent as a sort of *noli me tangere;* but I think there can be little doubt that the resources of modern intestinal surgery will be equal to the task of dealing radically with them, especially if the various proceedings to be described be undertaken early. For the purposes of this paper I leave out of view fistulæ connected with all that portion of the alimentary canal above the stomach, and I use the word "intestinal" in a strictly limited sense, confining it to the hollow viscera vulgarly known as the "bowels."

These fistulæ may be classified according to their position into gastric and intestinal (those of the small gut), colic, appendicular, and rectal; and these may be complete or incomplete. To the latter perhaps the term "sinus," used by Mr. Ball in his excellent Manual on Diseases of the Rectum, may well be applied, and it will serve to prevent confusion. The terms "complete" and "incomplete" refer to pathological conditions, and each may be converted into the other as an incomplete fistula or sinus may open into the peritoneal cavity, or into another hollow viscus forming what is known as fistula bimucosa, or it may open into the peri-peritoneal tissue when connected with a portion of bowel uncovered by peritoneum, or it may open through the skin; and a complete fistula may, by natural or artificial processes, such as closing of the external orifice, be converted temporarily and, under certain conditions, permanently into an incomplete one. The majority of intestinal fistulæ are *intraperitoneal*, but the rare form just mentioned, where the fistula occurs at a spot uncovered by peritoneum, is *extraperitoneal;* and if these latter forms were common their anatomical relations would have an important bearing on any operation for their cure. Among the complete forms are those in which one portion of bowel communicates with another, or with another hollow viscus such as the vagina or urinary or gall-bladder, and even with the uterus or with a cyst or abscess of a solid organ as of the kidney or ovary. Of this last rare form there was a very interesting example some years ago at the Hospital for Women, under Dr. H. Smith and myself. In this instance the small gut had become adherent to an ovarian abscess, and both were attached to the abdominal wall. The abscess pointed externally to the left, about two inches below and outside the umbilicus, and on opening it there came a free gush of air and foul-smelling pus. Of course, an abnormal or unnatural anus belongs to the complete form. A good definition of this variety of fistula, and an important one in view of operative measures, is that abnormal anus signifies a condition in which the whole or nearly the whole of the intestinal contents passes through the preternatural opening, whereas in ordinary fistulæ only a small, sometimes only a minute, quantity gets exit through the fistula. There are certain complex forms in which various complications have arisen which will be dealt with presently; but I will now relate a case which is, I believe, the only instance of permanent success following one of the modern plans of operating on the bowel, the chief object of which is to continue the circulation of intestinal contents, and of course to avoid the formation of an artificial anus, and also to shorten the time occupied by operation. I may just mention that the causes of abnormal anus are traumatic, pathological, developmental, and surgical. These terms sufficiently explain themselves.

CASE 1. *Cyst of broad ligament, extensive adhesions, partial removal of cyst, recovery; formation of fæcal fistula about six weeks after. Second operation, for closure of fistula, artificial anus made of opening in sigmoid. Third operation about three months after to cure artificial anus, ileo-rectostotomy, recovery.*—L. S——, aged sixteen, was admitted into my ward at the Hospital for Women on June 25th, 1890, for an abdominal tumour which she first noticed twelve months ago, but which has since increased in size slowly. It caused her a good deal of pain of a more or less paroxysmal character and used to prevent her getting about. The tumour extended above the umbilicus on the left side, and there was a free, thin wave on percussion. Catamenia regular, began at fourteen, but for the past year she has lost less, her periods lasting from six to seven days instead of eight. No trouble with bladder or rectum. On vaginal examination the left fornix bulged downwards by the tumour. The diagnosis was cyst of broad ligament or unilocular ovarian tumour. On July 3rd a median incision below the umbilicus was made, the cyst tapped, and a clear, greenish fluid, with some flakes of lymph, evacuated. There were extensive adhesions posteriorly, and coils of intestine and one of the sigmoid had to be cautiously separated. In spite of great care the peritoneal coat of the sigmoid, which was firmly adherent to the posterior layer of the broad ligament, which latter was closely incorporated with the cyst wall, was separated for about two inches, and the oozing from the muscular walls was stopped by light touches with Paquelin's cautery. Anteriorly the bladder was stripped off the tumour in the endeavour to remove the latter entire, and as this was firmly adherent to the pelvic floor, I determined to remove as much as possible of the cyst wall, and to drain the cavity. As there was considerable oozing in the position whence the bladder was separated, a smaller glass-tube was introduced here, and the wound closed, after cleansing the peritoneum with salt solution. At night there was no pain. Pulse 130, temperature 100°, and a good deal of oozing from the dressings. Next day the pulse was 134, temperature 101°; neither pain nor sickness; took milk-and-water well. At 5 P.M. I was sent for by Mr. C. E May, the house-surgeon, because the patient was faint, and all her dressings soaked with blood. I reopened the lower part of the wound, removed some clots, washed her with salt solution (1 per cent.), stuffed the bleeding cavity in front with boracic lint, and closed the part of the wound above the plug. Morphia subcutaneously for the first two nights. On the early morning of the fifth she had not been sick, and had had a good night without pain. Tongue moist; temperature 103·4°, but pulse too rapid to count. Gauze removed and cavity irrigated, and some sloughs removed. On the 6th the abdomen was rather distended; tongue dry and brown; pulse less frequent; temperature 101°. The patient had neither pain nor sickness, and took nourishment well. Late on the 7th one ounce of white mixture was given and it acted five times on the 8th. On the 10th she had solid food. The cavity was irrigated every four hours on account of the free discharge. On the 14th all symptoms much improved. No more sloughs, cavity closing, tubes removed; sent into general ward. On Aug. 6th fæcal discharge was first noticed to come through the unclosed fistula, but from the 15th to the 19th no fæcal matter passed through it. At this date the cough became troublesome. No dulness; a few râles at both bases. On the 20th a great quantity of fæcal discharge again appeared; and, in the hope that the opening in the bowel was small, the fistula was kept clean, pressure maintained, and the bowels regulated. The patient improved locally and generally for a time; but as the discharge of pus and fæces increased, and as she had high temperatures and pulse with much pain and some albuminuria, and as her general health was beginning to give way, I gave up attempts to heal the fæcal fistula without operation, and on Oct. 16th, after previously cleaning the fistulous track and dieting her for two days previously to operation, I reopened the wound, and after a search of half an hour, occasioned by many adhesions and matting together of neighbouring bowel

coils, and of the sigmoid to the cyst wall, I succeeded in finding the opening and isolating enough of the sigmoid, in which the opening was, to bring it just to the surface. There was free oozing. On inspecting the bowel, it soon became evident that the loss of serous coat which occurred at the first operation, added to the inflammatory condition subsequent to it, had rendered it impossible to close the opening by lateral enterorraphy; because to get sound serous membrane would have necessitated entering the needles at a distance apart of full three inches, and it is obvious that in drawing the sutures together a great kink and stricture would have been produced. Excision of the affected part and circular enterorraphy was also prohibited because of adhesions preventing approximation of the divided ends, so I had to content myself with stitching the opening in the sigmoid to the lower part of the abdominal incision, and forming an artificial anus for a time. A drainage-tube was passed into the remains of the original cyst, the peritoneal cavity cleansed, and the wound closed. One-third of a grain of morphia was given twice a day. On the 18th, much offensive pus passed through and around the tube; cavity well irrigated; very little pain. — 23rd: Bowels acted; abdominal wound almost healed; sinus much contracted. All fæces pass through artificial anus. —Jan. 17th, 1891: Since last note patient has progressed most favourably; now, fully formed dark-coloured motions pass entirely through abnormal anus and none *vid* the rectum, as a good spur has formed. Patient being much depressed at her condition and anxious for closure of the artificial anus, I fully explained to her and to her father and mother the very grave risks she would run, and as all were anxious to have an attempt made to relieve her of her unenviable condition, I set thinking of some milder measure than ileo-colostomy, which might answer the purpose. Plastic cutaneous operations with so large an opening seemed quite out of court, and I could not endeavour to clamp and destroy the valve like spur because of the very close proximity, and possible actual contact, of adherent small intestine—as seen at the second operation—at the bend of the posterior wall of the attached sigmoid, and as lateral enterorrhaphy could not be done for reasons already explained, I determined to try if I could separate enough of the large bowel to enable me to excise and suture the divided ends, and if this could not be done to adopt one of Senn's methods for short-circuiting of the intestinal canal. With these views I kept the patient on slop diet for a week before operation, administered a powder composed of naphthol, salicylate of bismuth, and magnesia carbonate (equal parts), in wafer paper, four times a day for a week prior to operation, and had both upper and lower openings of the artificial anus thoroughly syringed out for three days before operation. After thoroughly mastering Mr. Jessett's papers, I practised the various operations on the fingers of old gloves and on rubber tubing, and then took counsel with him. He agreed that the best thing would be to try to do the minor operation just mentioned if possible, but from my account of the case he was not sanguine that it could be done, and thought that I had best be fully prepared for ileo-sigmoidostomy or rectostotomy. Accordingly, on Jan. 29th I made an elliptical incision around the artifical anus rather more than one-eighth of an inch from the junction of skin and mucous coat, and dissected carefully down until I came to the union of parietal peritoneum with the bowel, then the peritoneal cavity was carefully opened upwards and the gut freed all round. On attempting to still further separate the sigmoid it soon became clear that its adhesions to the cyst wall and neighbouring small intestine were so intimate that injury would probably be done to the latter in persevering, so I gave up the attempt, and at once proceeded to do the major operation. The ileum being traced to the cæcum, a pair of pressure forceps was passed through the mesentery about three inches on either side of the place of division of the gut, and a piece of solid rubber cord, about one-eighth of an inch in diameter, carried through. These were gently knotted and a pressure forceps applied to keep the knot from slipping. If the intestines have been kept empty and well disinfected there will not be need even of an assistant's fingers, as any slight secretion from the divided gut can be sponged away. A flat sponge being passed beneath the gut, it and its mesentery were divided about four inches from the cæcum, and all bleeding points ligatured with fine catgut. The incision in the mesentery was continuous with that in the gut—not wedge-shaped—and a good inch in length. The cæcal portion of the ileum was then invaginated and sutured with a continuous catgut suture. A rubber ring about $\frac{1}{16}$ in. thick and about $\frac{3}{4}$ in. in depth, was cut from a piece of rubber of sufficient length, when its ends were united to fit the lumen of the gastric end of the divided ileum, and this was stitched to the lower end of the bowel by means of a continuous catgut suture. Through its upper end, and from within outwards, a long piece of catgut, with a needle at each, was passed, using each needle separately, about a quarter of an inch from the upper end of the ring, through it and the bowel coats at the free or convex side of the gut, and also on either side of its mesenteric attachment. A longitudinal opening of sufficient extent, just to allow the ileum to be implanted, was made on the right side of the upper part of the rectum. The four long sutures were held by the fingers while the ileum was being invaginated, and

FIG. 1.

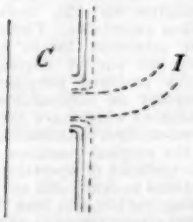

Diagram of the proper mode of implanting small into large intestine. C is colon, I is ileum. The dotted line represents peritoneal coat. For clearness' sake the other coats of the ileum and the rubber ring are omitted.

Mr. Jessett's finger being introduced into the lower opening of the artificial anus was able to make out that the implanted gut was in proper position. As the opening made in the rectum was slightly smaller than the calibre of the ileum with the rubber ring inside, a small part of the serous coat of the rectum became turned in, and apposed to that of the ileum, as represented in Fig. 1. I discussed the propriety and probable advantage of this before operation with Mr. Jessett, and it appears to be an additional security against leakage, and a modification of some practical importance. The sutures through the ring in the ileum were passed through the serous and muscular coats of the rectum before invagination, and gradually tightened as the ileum was getting into place, and when *in situ* they were secured and two additional stitches were, for further security, passed laterally, and all were cut short. On introducing my finger through the abnormal anus, to

FIG. 2.

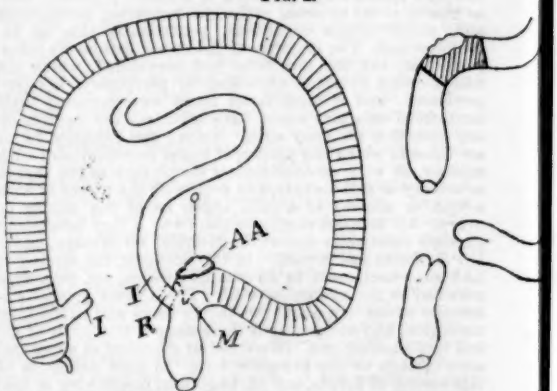

Diagram of the operation and its results. A A, Artificial anus. I I, Ileum. The cæcal end invaginated and sutured, the proximal end with R; a rubber ring implanted into the upper part of the rectum. M indicates the inverted and sutured mucous coat of the rectum. The figures to the right show the complete operation as intended. The upper one represents the abnormal anus excised, the lower one the sigmoid and rectum invaginated and sutured. The abdominal incision is wrongly represented as extending to the umbilicus. The shading shows that the whole of the large intestine is abolished by the operation.

ascertain the condition of parts, I thought the aperture in the implanted ileum was too small, as it would only admit the little finger. Evidently tightening of the sutures had caused puckering; but a second's reflection consoled me, for the contents of the small gut are usually semi-solid or liquid and the opening would suffice. Now I should have liked to have excised the abnormal anus and invaginate both ends of the sigmoid as in Fig. 2; but, as already explained, there was not enough peritoneal coat on the bowel, and the adhesions prevented this; so that I had to content myself with cutting circularly through the mucous coat of the sigmoid below the artificial anus, and after stopping bleeding to turn it in, as in the diagram, and suture. The artificial anus was then stitched to the lower end of the abdominal wound, the peritoneal cavity washed with salt solution, the wound closed, and dressings and a many tailed bandage applied. The object of invaginating and suturing the mucous membrane was to shut off and prevent any reflux in case the rectum did not act well. The operation lasted an hour and three-quarters. It is important to mention that in closing the abdominal wound I could scarcely get hold of any parietal peritoneum, only a slender bit here and there, and had to trust to union of the musculo-cutaneous structures. Small intestine was adherent to and flattened out against the parietes, and only the greatest care prevented my puncturing it when applying sutures to the abdominal incision. It will be observed that the serous and muscular coats of the posterior wall of the sigmoid are still continuous, and that only the mucous lining of the upper part of the rectum has been invaginated. The patient bore the operation pretty well, was put into a warm bed with hot bottles to the feet, and had one-third of a grain of morphia subcutaneously. At night she had rallied well, but had been slightly sick from the ether. The next day, however, she became very ill, the pulse running up to 152 and the temperature 102°. On Feb. 1st the pulse was 120; temperature 98·6°. She was frequently slightly sick, and took very little nourishment. There was a good deal of discharge from the wound. The stitches at the upper part of the wound had given way, but the peritoneal cavity was shut off by granulations. Has had one hypodermic injection of morphia daily. On Feb. 2nd the lower part of the incision, above the sigmoid, had given way, and a large granulating surface was left. Intestinal contents escaped from the lower part of the wound, showing that the inverted mucous lining of the rectum had not united. On Feb. 5th a small solid fæcal mass passed per rectum, which contained a fair amount of light-coloured intestinal contents, as ascertained by rectal examination. A small soap-and-water enema was given, and much of it came through the lower part of the abdominal wound. On the twelfth or thirteenth day after operation she was sent into the general ward. The rubber ring had not yet come away, but she had passed per rectum on two or three occasions small masses of fæces. She was cheerful, and ate and slept well.—Feb. 24th: Wound filling up well; general health excellent; rectum acts slightly, but until the ring has passed it is unlikely to assume its full functions.

Anyone reading the above account will notice that I had an unusually difficult and complicated case to deal with, and will see that my hand was forced to the adoption of an operation of which I had no personal experience. There were extensive adhesions at the first operation, and these were aggravated and increased at the second and third operations; so that, as already pointed out, no milder proceeding was open to me. So far what I did has proved successful; I do not, however, forget that my patient is young, and that until the rectum acts properly and the ring is passed I cannot claim a complete success; but it must be recollected that her health was not of the best after two serious operations and some months' residence in hospital. Though this is the first successful case of intestinal implantation, yet the fæcal fistula above the implantation must close or be closed before I am entirely satisfied with the result. Had I been permitted by the pathological conditions to do what I intended—i.e., to excise the artificial anus and invert and suture the divided ends of the sigmoid,—I can have no doubt that a rapid practical cure would have resulted. My success shows surgeons that with better pathological conditions better results may be obtained, and this case demonstrates that even with unpromising circumstances as much as could be endeavoured to be done completely succeeded. A glance at Fig. 2 will show that the result of the operation is to shut off four inches of the ileum and the whole of the large intestine, except the rectum, from the intestinal circulation. In process of time this will atrophy, and should she live for years will probably be converted into a fibrous cord. The opening at the proximal end of the sigmoid is now inactive, and I expect that its swollen mucous membrane will ulcerate and ultimately unite. As soon as the rectum acts well, and the fistula at the lower part of the wound left in the track of one of the drainage-tubes ceases to be soiled by intestinal contents, it will close, and the patient will be much in the state I wished, had I been able, to leave her in at the close of the operation—i.e., with the sigmoid completely shut off. I may point out that the fistulous communication with the remains of the broad ligament cyst complicated very much the second and third operations. No antiseptics were used inside the peritoneal cavity in either of these three long and serious operations, unless the weak salt solution be called an antiseptic. I have been puzzled by the curious-mindedness of believers in antiseptics, as on the one hand they claim everything, even simple cleanliness or hot water, as antiseptics if successes follow their use; and on the other, if failure follow the use of the most vaunted antiseptics in the hands of thorough believers, they say there was some flaw in the process. I fear too much credit is given to chemical means and too little to the much more important matter of experience in dealing with difficult and complicated abdominal cases.

In my next paper I will take up the subject of intestinal fistulæ and illustrate their various forms, as well as the operations most suited for their abolition.

RUPTURE OF GALL-BLADDER.

RETENTION OF A CONSIDERABLE QUANTITY OF BILE IN THE PERITONEAL CAVITY FOR FIVE WEEKS; OPERATION; RECOVERY.

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THIS case illustrates so well the influence that bile exerts upon the peritoneum when retained in a free state in a considerable quantity in that cavity for a period of five weeks that I will offer no apology for putting it on record. It is certainly quite unique in my experience, and but a very few similar cases have been described by others.

A. B——, a lad aged eighteen, was admitted into Guy's Hospital under my care on May 10th, 1890. I saw him a few minutes after his admission, and found him apparently in a moribund condition. His face was cold, and his cheeks and lips of that livid colour which indicates a rapidly approaching dissolution. His pulse was hardly perceptible at the wrist. The abdomen was very distended, and obviously contained much fluid. The lad was practically unconscious and was quite unable to give us any information. We gathered from a woman who came with him that five weeks ago he had received a blow on the abdomen, that he had been in a hospital for four weeks, and that during the week following his discharge he had got very rapidly worse. Though I felt and said that I did not think the boy would survive any operative interference, and would die on the table, on the ground that one should give the patient any chance, however small, an operation was determined on. He was anæsthetised without delay, and during this process ether and brandy had to be given frequently subcutaneously. On making an incision into the abdomen below the umbilicus, about three gallons of fluid, very deeply stained with bile, were removed. On examining the margin of the liver with the finger, no irregularity or adhesion could be felt along its outline. The gall-bladder was empty, as were all the intestines. A Keith's tube was inserted, and its extremity connected with a vessel containing carbolic lotion. During and after the removal of the fluid the boy's condition improved rapidly, and by the time the dressings were applied his appearance was such as to make us hopeful of his recovery. About a pint of the same deeply stained liquid came away through

the tube, and within twenty-four hours, as the discharge had quite ceased, the glass-tube was removed. After this the boy made rapid progress to recovery. He gave us the following details of his history. On April 8th, at 5 P.M., he was struck in the upper part of the abdomen, just above the umbilicus, by the pole of a van. He fell down and became unconscious, remembering nothing till he was taken into a hospital, where he remained for four weeks. He suffered great pain in the abdomen for a day or two. He was kept in bed for upwards of a fortnight. After this he was up and performing small duties in the ward for the twelve days preceding his discharge on May 2nd. The patient stated that ever since the injury his abdomen had steadily increased in size, and that it was very tense and uncomfortable when he left the hospital, so much so that he was unable to eat except in small quantities. When washing him on his return home his mother noticed the great distension of the abdomen. The discomfort which it caused him was so great that he was unable to lie on his back, but was obliged to recline on either side. The distension increased even more rapidly after his return from the hospital, and he found himself unable to take any food. He was sick several times, vomiting a dark-brown liquid. He became very much worse on the 9th, and was admitted into Guy's Hospital on the following day in the condition already described. No fluid re-collected in the general peritoneal cavity, but there appeared a gradually increasing area of dulness in the position of the liver. This on May 31st extended for a considerable distance into the right chest and downwards towards the umbilicus. It was aspirated, and about six pints of bile and fluid removed.

On June 8th, as the abnormal area of dulness had again returned, though to a less extent, I made an incision into it below the margin of the thorax, and introduced my finger into what was obviously an adherent and distended gall-bladder. At the time it was first tapped, owing to the position of the dulness, I suspected that I was dealing with a collection of bile localised in a portion of the peritoneal cavity, that cavity being possibly in communication with a bile-duct in the liver by a fistulous opening. This supposition the more complete subsequent operation negatived. Why the distension of the gall-bladder should have produced a tumour in the thorax rather than in the abdomen was not quite obvious, except on the ground that its lower portion had become fixed to the anterior abdominal wall at an early date. The liver was displaced backwards, its anterior margin not reaching forwards beyond the centre of the diaphragm. During the whole period of his stay in the hospital his motions were normal. The drainage-tube, which was placed in the gall-bladder, soon ceased to discharge any bile, and it was removed on June 16th. The boy is strong, gets up, and has gained a great deal of flesh since his admission. The explanation I would suggest is that the gall-bladder was ruptured at the original injury, that bile continued to escape through the tear in its wall till the peritoneal cavity was drained, that the wound in the gall-bladder was then closed by its adhesion to the abdominal wall or adjacent viscera, and that this adhesion exerted traction upon its orifice in such a manner as to interfere with the escape of its contents from it without obviating the passage of bile into it. By what means the bile got into the peritoneal cavity is, however, of little importance as compared to the fact that a very considerable quantity of it may remain free in the abdomen for a period of five weeks and produce no other symptom than a serous effusion, whose deleterious influence upon the organism was apparently simply mechanical, all discomfort disappearing at once, and permanently, with the removal of the mixture of bile and serum. This fact alone will give one much more courage in interfering with abnormal conditions of the gall-bladder and bile-ducts than formerly, and will completely remove the dread experienced of the imaginary risks which were involved by the escape of a considerable quantity of bile from the gall-bladder, or even from the common bile-duct. In the latter case it is of especial importance in the removal of gall-stones.

I am informed by Dr. Pavy that when making experiments on the secretion of bile in dogs and rabbits he found no harm result from the escape of even a considerable quantity into the peritoneal cavity, and he had concluded that, as far as these animals were concerned, bile exercised no irritant action upon the peritoneum.

St. Thomas's-street, S.E.

SUGGESTIONS WITH REGARD TO THE AMENDMENTS OF THE MIDWIFERY CONTRACT.[1]

BY G. ELDER, M.D.,

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SOME few weeks ago I saw in consultation a primipara, the subject of puerperal eclampsia, with the following history. Seven years previously she had a severe attack of post-scarlatinal nephritis, from which a seemingly perfect recovery had been made, and, as a matter of fact, no professional assistance had been required until the night prior to my visit, when the onset of the convulsions caused the family doctor to be sent for. He ascertained that pregnancy had advanced to the eighth month, that up to the seizure her health had appeared to be as good as usual, and that the renal function was all but suppressed. Despite every possible effort, consciousness never returned, and the case had a fatal issue shortly after my arrival. I believe that had this woman's health been supervised during her pregnancy, a catastrophe might have been averted by the induction of premature labour as soon as the kidneys threatened to cease their function, and thus, in all probability, the maternal life at least would have been saved.

Shortly following the above case I saw an example of puerperal peritonitis, also in a primipara, where the labour had been natural, and every needful precaution taken by the medical attendant to prevent septic infection, and yet, despite what might seem in the eyes of some needless precautions, sepsis declared itself, and rapidly destroyed her life. It afterwards transpired that on the evening of the day of her confinement the patient's mother came from attending upon her husband, who was suffering from a severe attack of facial erysipelas, to look after the daughter, so that what had seemed an inexplicable case was made clear by the knowledge of this fact.

These two cases, taken at random from my own practice, and which no doubt might be supplemented by others, illustrate grave defects in the interpretation which is now put by the laity, and also by the medical profession, on the obligations of the midwifery contract, an interpretation which is so limited in its application that in the vast majority of cases it leaves the nearly eleven months, ranging from the beginning of pregnancy to the termination of normal uterine involution, absolutely unprotected, with the exception of the week or ten days dating from labour onwards—a system which is responsible for not only a large amount of preventable disease, but also waste of life, and which leaves the door open for the popular voice to lay to the charge of the medical profession blame which, in many cases, is undeserved and unjust.

Let us for a moment consider the mode of making and fulfilling an ordinary midwifery engagement. Personally or by proxy, a pregnant woman requests a doctor to attend her, and beyond noting her name, residence, and date of expected confinement, few, if any, other inquiries are made; none at least with the view of carefully estimating the woman's power to carry a child to the end of gestation safely, or, if she is a nullipara, of gauging her pelvic capacity, so that the woman is allowed to go her way, stumbling through the weary months in front of her as best she can until labour sets in, when the second interview with the doctor takes place. Now it seems to me that if at the first visit, and as a matter of routine, a careful examination into the previous life-history of the patient and her existing state of health was made, as well as a pelvic examination in the case of a woman who had not borne a child, or where she had had one and there had been obstructive difficulty, an infinity of needless anxiety would be spared the medical attendant, and, what is more, a substantial benefit would be derived by the patient. Doubtless, the major number of women so examined would, beyond general hygienic directions such as ought to be common knowledge to every woman, require no further attention during utero-gestation; but there would still re-

[1] A paper read before the Nottingham Medico-Chirurgical Society on March 11th.

main a considerable residuum suffering from cardiac, renal, or lung troubles, acquired or inherited blood taints, &c., requiring almost continuous observation and treatment during the whole period. This broad and, as I venture to submit, proper view as to one's relation with one's patients at this crisis of their lives would be fruitful in the prevention of an incalculable amount not only of maternal, but also of infantile ill-health and mortality.

Secondary only in importance to the satisfying oneself as to the possession of needful strength on the part of one's patient to undergo the ordeal of gestation and parturition is the control of the selection of the nurse, upon whose obedience and intelligence the issue of a labour case largely depends—the necessity for this control being greater in first cases than in others, inasmuch as the young and inexperienced mother is as a rule plastic in the hands of those who are about her; and that she very frequently suffers from this trustfulness is attested by the very large proportion of pelvic troubles which date from first confinements. The custom which now largely prevails of the patients choosing their own nurses is mainly responsible for a great deal of puerperal disease and death, and that this is so my second case illustrates very markedly. A very large number of women, more especially in country districts, take to monthly nursing without any special qualification or training for the task, and without the most elementary notions of the hygienic requirements either of the lying-in chamber or the lying-in patient; and, unfortunately for the medical profession at large, the harm which these women often do is never found out till it is too late, whilst the blame is frequently wrongly laid at the doctor's door. Did medical men only make it an essential part of the contract that they should have the selection of the nurse, and satisfy themselves not only of her capability, but also of her freedom from the danger of infection, puerperal accidents would undergo a very substantial diminution. Closely connected with the matter of the nurse is also, when the social position of the patient will allow it, the choice of the lying-in chamber. This ought clearly to be as carefully chosen as if a surgical operation had to be undergone. Especially should a badly lit, ill-ventilated room be avoided, or one where, by reason of proximity to a watercloset or bath-room with suspicious sanitary arrangements, danger to the patient is likely to follow. The satisfactory recovery of the patient after parturition, it must never be forgotten, depends largely upon her environment.

Finally, instead of the visits terminating at the eighth or tenth day after labour, they ought to be spread over the whole period of normal uterine involution—that is to say, from four to six weeks; in fact, the patient ought not to be left until local examination has proved that a satisfactory recovery has been made. The present mode of limiting the after-visits to four or five, or it may be six, leaving the patient's future actions to be regulated by her feelings or the advice—good or otherwise—of those who are about her, is largely responsible for much ill health. No uterine trouble is more common in our hospitals than subinvolution, nor one which so clearly has for its cause premature getting up of the parturient woman, and with which there are others, though less common, which might be equally well avoided by the medical attendant insisting upon the needful time being given to the parts to recover from the damage necessary by the birth of the child. In opposition to what has thus been somewhat imperfectly sketched out, the medical profession may with justice say that the remuneration which now is occasionally grudgingly paid by the public, and is in a large number of instances, to my mind, totally inadequate to the responsibility and the time spent, renders the scheme impracticable; but to this I may be allowed to answer that, although I have carefully refrained from touching upon the matter of the monetary equivalent for such services, they have not been forgotten by me, and that the time has now arrived when such a scheme, or some modification of it, should be adopted by the medical profession at large. My own feeling is that instead of the present system a fee, according to the position of the patient, should be charged for attendance upon the confinement itself, and that attendances before and after this date should be charged as ordinary visits. In conclusion, I hope that at least this paper will draw the attention of the profession to a question which is of grave and every-day importance.

Nottingham.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTES ON A SERIES OF CASES OF INFLUENZA.

BY WILLIAM STANWELL, M.R.C.S.

IN the belief that small contributions, even if premature, may be of some service, I forward the notes of fifty-three cases of influenza that I have had under treatment from the 8th of April to the 11th of May (fifteen in April, thirty-eight in May). The incubation period seems to be from three to seven days. This conclusion is derived from a study of the following facts:—1. Cases on the following dates all had opportunities of transmitting to one another, April 8th, 11th, 15th, 23rd, 24th, 29th, May 2nd, 2nd, 5th. 2. Where more cases than one have occurred in one house on different days, the following are dates of occurrence:—

House A.—April 15th, 23rd, 27th, 27th, May 8th.
" B.—May 1st, 1st, 7th.
" C.—May 2nd, 5th, 5th, 9th.
" D.—May 3rd, 3rd, 3rd, 11th.
" E.—May 4th, 11th.
" F.—May 5th, 10th.
" G.—May 8th, 11th, 11th, 11th.

In B. case on May 7th and in F. case on May 10th had no opportunity of contracting elsewhere, an incubation of five days in one, six days in the other. In C. there is very little chance of a second contagion from without.

The invasion is marked by chilliness, shivering, feeling of cold water down the back, occasionally rigor, followed by a rapid rise of temperature to 102·5° or 103·5° (highest I have taken 105·1°), with intense headache, aching in back and limbs of more or less severity, suffused eyes, varying degree of sneezing and coryza, sometimes none; laryngeal sore-throat with hoarseness and cough, secretion as a rule very scanty; in some cases vomiting; natural emesis seems beneficial. In the majority of cases the temperature falls in from twenty-four to thirty-six hours to normal, the fall being accompanied as a rule by profuse perspiration; with this fall of temperature the various aches very rapidly disappear, and a varying amount of prostration and debility remains for a short time. The appetite for food, which has been at zero, rapidly rises, and in from six to ten days in uncomplicated cases the patient is well. In fifty-three cases I have had two cases of pneumonia, one very severe; and one case in which twelve days after the first attack a relapse or second attack supervened, in every way identical with the first. As yet I have had no fatal cases. In several cases I have seen during convalescence a tendency to vertigo, and in a large number of cases slow pulse (40 to 50) occurs, and lasts for some days after the fall of temperature.

Treatment.—Bed, with abundance of covering, to encourage free perspiration, which appears to be desirable. Five grains of sulphate of quinine in powder in the fever stage brings down the temperature more quickly than is the case where no antipyretic is given; this seems to be of importance, as the intense pains disappear with the lowering of the temperature, and the curtailing of the pains is the consummation most devoutly wished for by the sufferer. Afterwards I prescribe tincture of Indian hemp, with or without iodide of potassium, and the tinctures of bark and rhubarb, or the tincture of bark with acids. In the present epidemic, as in that of last year, I have found the tincture of Indian hemp of the greatest value in almost all cases, but more particularly in the more debilitated cases, with slow pulse, and very little, if any, inclination for food or energy. Diet: Alcohol and beef-tea I forbid, as they seem to aggravate; milk and soda-water, tea and toast, and light gruel are all that is desired for the first twenty-four hours, nor does it seem necessary to press food; afterwards, under judicious treatment, the appetite soon returns, food is relished, and convalescence complete.

Rochdale.

AN UNUSUAL SYMPTOM IN MIDDLE EAR DISEASE.

BY R. LAKE, F.R.C.S.

THAT sound caused by air entering the middle ear on inflation can usually only be heard by means of the diagnostic tube, induces me to put the following case on record. Grüber says, speaking on this point, "for the more distinct perception of which [sound] the otoscopic tube is employed."[1] Politzer, "which [sound] can be perceived either by placing the auricle immediately to the concha of the person," and also "this blowing sound has various degrees of strength and distinctness."[2]

The patient, a young lady of twenty-one, was under treatment with middle ear catarrh due to Eustachian obstruction; air would not enter the cavities of the tympani either by Valsalva's or Politzer's method, and could only be driven in through a very fine catheter; the finest Eustachian bougie failed to enter the tube at all. Hearing (watch) left normal, and right four inches; after inflation eighteen inches. On Feb. 20th, 1891, I examined the nasopharynx under ether, and, finding some adenoids, they were removed with Daly's scraper, and a week afterwards the nose was irrigated with an alkaline solution. After this had been employed daily for some days, my patient informed me, that when she blew her nose her left ear made a noise which her sister heard "across the room." I examined the ear, and found the drum apparently normal; the hearing of the right ear was now five feet. On April 6th I was sent for and told the noise was again present. On my arrival the patient used her saline solution and inflated her tympanum. I then heard the sound, and though I stood twenty feet away, I still heard it distinctly. It resembled the sudden inflation of a small bladder. Testing the Eustachian tubes, a large-sized bougie entered freely.

Barnes, S.W.

CASES OF CONCURRENT SCARLATINA AND MEASLES.

BY N. MORRISON MACFARLANE, M.D.

THESE diseases, though sometimes epidemic together, are rarely found concurrent in the same person. Such a condition occurred in three cases in children of the same family under my care, and, as the coexistence of specific fevers is always interesting, I have been induced to record them.

J. S——, aged four years and a half, was suddenly seized with sickness at school on Dec. 5th, and sent home. When seen the next day the sickness had abated, but his temperature was 104°, pulse 130, skin dry and pungent, tongue covered with a white fur, and he complained of headache and a sore-throat; no rash visible. Next day the characteristic rash of scarlet fever made its appearance, and increased in intensity till the following day, when the skin presented an almost uniform blush. On the evening of the 8th he commenced to cough, and there was coryza and suffusion of the eyes. On the 10th the rash began to fade, but on the following day the skin presented an unusual appearance. The red points of the scarlatinal rash were still visible, but there was likewise a purple papular eruption which presented all the characters of that of measles. On the 15th the scarlatinal rash had vanished, but that of the measles persisted for several days after desquamation had commenced. Beyond a slight swelling of the glands of the neck and suppuration of the right middle ear, which retarded convalescence for a short time, he made a good recovery. A younger brother aged three years was taken ill on the 23rd with sickness, sore-throat, and pain in the head; and on the 25th there was a well-marked scarlatinal rash, which was followed in three days by that of measles. He progressed favourably till the 31st, when the glands of the neck and under the jaw became much swollen. The throat and mucous membrane of the nose became greatly inflamed, and showed patches of false membrane. He gradually got worse, convulsions supervened, and he died on Jan. 4th. A younger brother aged one year and a half was seized in the same way as the other two on Dec. 27th. The scarlatina came first, followed in four days by the measles. Both ran their course without any untoward symptom, and he was progressing favourably until Jan. 12th, when his neck became much swollen and inflamed. Suppuration and sloughing ensued, and he died exhausted on Jan. 19th.

Preston.

[1] Grüber, English edition, p. 177.
[2] Politzer, English edition, pp. 110 and 132.

A CASE OF POISONING BY CAMPHOR.

BY SIDNEY E. ATKINS, L.S.A.

I WAS called one day last week to see C. A——, aged five, who, I was informed, had swallowed some spirit of camphor. On arrival, I found the child lying on the sofa deeply convulsed, pupils widely dilated, pulse 120, very weak and small, extremities very cold and face livid. From what I could gather, about two and a half or three drachms of spirit of camphor had been taken, which would represent about fifteen or eighteen grains of the pure drug. I immediately gave an emetic of mustard-and-water, followed by, as soon as I could obtain it, half an ounce of ipecacuanha wine. This produced vomiting of lightish brown fluid, having a strong smell of camphor. Hot flannels were applied to the feet, and as soon as the vomiting ceased two teaspoonfuls of castor oil were administered. The patient made a rapid recovery, with the exception that for the next two or three days she complained of nausea and pain in the epigastrium, and was unable to retain anything in the stomach but a little beef-tea or soda-and-milk. This I attribute to a slight attack of gastritis.

Sumner-street, S.E.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Procemium.

KING'S COLLEGE HOSPITAL.

A CASE OF BILATERAL APOPLECTIFORM DEAFNESS; REMARKS.

(Under the care of Dr. FERRIER.)

WITH regard to the exact nature of these cases of idiopathic disease of the internal ear, Rossa writes (*loc. infra cit.*): "It is perhaps not so clear as that of the traumatic variety; but judging from those which I have seen, we may fairly adopt the following heads, hæmorrhagic and inflammatory. The hæmorrhagic or apoplectiform are those that occur very suddenly, and, so far as we at present know, hæmorrhage may occur into the cochlea and semicircular canals in persons who have previously been in good health and in whose bloodvessels there are no other evidences of breaking down. *A priori* we should conclude that patients suffering from Bright's disease might have hæmorrhage into the labyrinth, but as a clinical fact, in the few cases that have been observed of hæmorrhage into the ear in Bright's disease the bleeding occurred in the middle and not in the internal ear." The case to which Dr. Ferrier alludes was that of a woman aged forty-seven, and there was an interval of three years between the attacks. Lucae has published the case of a boy aged three years and a half, who became suddenly deaf on both sides. The attack was preceded by tinnitus, but unaccompanied with dizziness. At the necropsy a hæmorrhage in each labyrinth and in the canals was found. The following case is worthy of record as an example of an affection of which few are to be found in the records of aural disease.

Douglas C——, aged thirty-six, a railway guard, was admitted into the Todd ward on Feb. 2nd, 1891. Apart from venereal disease, which he contracted thirteen years previously, he had always enjoyed excellent health. He had never had any affection of hearing until eighteen months ago, when, without any warning, something, he said,

suddenly "went pop" in his head, and he found that he had all at once become totally deaf in the right ear. He has remained so up to the present time. On Jan. 16th of this year, whilst scrubbing a floor, he was seized with dizziness, and a tendency to fall, he thinks, towards the right side. This soon passed off, but on Feb. 1st he had another similar attack, and all at once something "seemed to go crash" in his head, and he became unconscious. On coming to, at the end of six hours, he found himself absolutely deaf on the left side as well as on the right side. The attack of unconsciousness was not accompanied by any convulsive phenomena, or by any other symptoms except the deafness. The patient, a healthy-looking, well-nourished, florid-complexioned man, complained of total deafness and slight giddiness on movement, but otherwise he felt perfectly well. He was examined carefully by Dr. Pritchard, who reported: "The external meatus is normal, the membrana tympani slightly retracted, but otherwise normal. A tuning fork sounded loudly on the left mastoid is very faintly perceived, on the right not at all. Both Eustachian tubes are patent." The patient could only be communicated with by signs and writing, which he read and replied to in a high-pitched voice, clearly and intelligently. He complained of a constant slight roaring sound in his head. He walked cautiously, with the feet rather widely separated, but all his movements were coördinated with precision. There was no paralysis of motion or sensation anywhere. The tendon reactions and superficial reflexes were normal. Sight was unimpaired; the optic discs normal, and the pupils reacted to light and on accommodation. The thoracic and abdominal viscera were normal. The urine had a specific gravity of 1010, and contained neither sugar nor albumen. The treatment consisted mainly of blistering behind the ears and the administration of large doses of iodide of potassium. No improvement of the hearing resulted, however, though the patient's gait became more secure. He left the hospital on April 10th, and was just able to recognise a shrill sound made in close proximity to his left ear, but could not distinguish words.

Remarks by Dr. FERRIER.—This case is in all probability one of hæmorrhagic effusion into the labyrinth, first on the one side and then, at an interval of eighteen months, on the other. Several cases are on record of hæmorrhagic effusion into the labyrinth, proved post mortem, as well as many others presumably of a similar character. Some of these have been associated with vertiginous symptoms (Ménière), others not. The rarity of this case consists in the bilateral nature of the affection (a similar one has been reported by Roosa, *American Journal of the Medical Sciences*, Oct. 1874, p. 386, Case 14), preceded and accompanied by vertiginous symptoms and followed by disorder of equilibration lasting at least several weeks. That the pathology of this case was an effusion into the internal ear is indicated by the practically total loss of hearing, tympanic and perosseous, and the absence of symptoms which would have been caused by intra-cranial effusion; for though there appears to have been a period of unconsciousness, this was probably indirect rather than due to effusion into or on the brain itself. There was no Bright's disease or constitutional condition predisposing to hæmorrhage, and there was no indication that the syphilitic infection had led to any local affection of the auditory apparatus antecedent to the onset of deafness.

SUSSEX COUNTY HOSPITAL.

A CASE OF RIGHT DIAPHRAGMATIC HERNIA; DEATH; NECROPSY.

(Under the care of Dr. W. A. HOLLIS.)

PHRENIC or diaphragmatic hernia may take place (1) as a consequence of weakening of the diaphragm in some part, permitting of the protrusion of some of the abdominal contents into the chest; (2) through a congenital defect in the muscle; (3) through one of the natural apertures; (4) through an opening which has formed as the immediate or remote result of a wound or laceration of the muscle. By far the largest number of recorded cases of this form of hernia have been through a congenital defect on the left side of the diaphragm. In fact, it is extremely rare to meet with this condition on the right side, and the anatomical arrangement of the viscera of the abdomen readily accounts for this. Dr. E. Cornell[1] and Dr. Hillier[2] have described cases in which from congenital defect the protrusion took place into the right chest. The patient of the former was a female aged ten months; all the intestines had escaped into the right pleura through a hole two inches and a half in circumference, situated on the posterior right side, and an inch and a half from the spine; the stomach and rectum alone remained in the abdomen. Dr. Hillier's patient was also a female, aged seven months. Nearly all the small and two-thirds of the large bowel had escaped through an opening one inch in diameter. This opening, which had a sharp tendinous margin, was placed in the right half of the diaphragm, but its exact situation is not given. Dr. Murchison[3] had a man, aged fifty-five, under his care in 1865, who died in the London Fever Hospital. He was admitted in a state of collapse, with signs of pneumonia at the right base. He lived eight days. At the necropsy a circular opening about six inches in diameter was found in the right side of the diaphragm, through which almost the whole of the right lobe of the liver and the gall-bladder were protruded into the cavity of the right pleura. The margin of the opening was well-defined. The local condition, with presence of deep cicatrices in the liver, suggested to Dr. Murchison that the hernia was probably due to an old rupture of the parts. Death was from pleuro-pneumonia on the right side, the cause for which could not be ascertained. For the notes of the following case we are indebted to Mr. E. F. Maynard, assistant house surgeon.

J. H——, a boy aged sixteen, was admitted on March 10th, 1891, at 12.30 P.M., complaining of severe abdominal pain. Three hours before admission he was found lying in the street doubled up with pain. When attacked he was sweeping snow from the pavements, but, according to his own account, was working easily. He was perfectly well up to the time of the seizure, and had had nothing but bread-and-butter and tea within the last twenty-four hours. He was described as having always been a "hearty" boy. On admission he was in a state of collapse; his face was blanched; pupils dilated; pulse 56 and weak; temperature 95·8°; tongue furred, white, and he complained of pain in the abdomen. He said his bowels were opened in the morning, previously to the onset of pain; that the pain was of a dull, aching character; that he had retched several times since, but had not vomited. His heart's apex was two inches outside the nipple line in the sixth interspace; and there was retraction of the fifth and sixth spaces with the systole. There was no bruit. Harsh puerile breathing was heard all over the left chest. There was a subtympanitic percussion note all over the right chest, suggesting pneumothorax. The breath sounds were distant and cavernous. There was absolute loss of vocal fremitus, and vocal resonance as high as the angle of the scapula. The abdomen was retracted and boardy, and the percussion note almost dull. In bed he lay on his left side with his knees curled up on his abdomen. Urine acid, sp. gr. 1035; no albumen or sugar, but a thick deposit of urates. He was put on milk and broth diet. At 6 P.M. he was still in a good deal of pain; twenty minims of tincture of opium were given; he had retched frequently since admission but had not vomited. At 11 P.M. pain was still more severe in the abdomen, and he complained of pain in his right chest and asked that it might be rubbed; his breathing was rapid and shallow, his countenance bluish, and pulse very weak. His condition being grave it was decided to aspirate, the symptoms pointing to air, and possibly fluid, in the right pleura. Accordingly a large aspirating needle was introduced between the sixth and seventh ribs about the posterior axillary fold; the needle being withdrawn, there was no outflow through the cannula. A probe-pointed stylet was then thrust down the cannula, and on its withdrawal air and a brownish fluid with abundant flakes were drawn off to the amount of five ounces and a half. The fluid had a grumous smell, like that of stomach washings, was strongly acid, and on microscopic examination was found to contain oil globules, starch granules, muscular fibre, and numerous bacilli. The patient was much relieved, the pulse improved, and he was free from pain for about one hour. Nothing was given by the mouth, but nutrient enemata were ordered every four hours. At 1 A.M. the pain had returned. Morphia was given hypodermically along with a morphia suppository and hot fomentations were applied. Half an hour after the first enema he vomited, the vomit consisting

[1] American Med. Rec., Phila., vol. viii. 1825, p. 236.
[2] THE LANCET, vol. i. 1861, p. 391.
[3] Trans. Path. Soc., 1865-66, vol. xvii., p. 164.

of a brown material similar to that drawn off with the aspirator. He steadily became worse, breathing growing more difficult, irregular, and at last gasping; cyanosis increased, and he died at 6 A.M.

Necropsy, thirty hours after death.—Post-mortem discolouration most marked. Body fairly well nourished. On opening the thorax the right pleura was seen to contain a brownish sour-smelling fluid. The right lung was collapsed, but easily dilatable with the air-pump. It was found lying above, and internal to bowel and mesentery in the upper part of the right chest, immediately to the right side of the middle line. The right chest was also seen to contain omentum, mesentery, and both large and small bowel; these were traced from the abdomen through an aperture between the external arched ligament and the central tendon of the diaphragm. The opening had a well-defined, rounded, smooth edge to the touch, and there was no evidence of any recent rupture of the parts. The bowel contained in the chest was of a dark-slate colour, and both viscera and mesentery were in places mottled and green. The whole length of the intestines, excepting the first part of the duodenum, the descending colon, sigmoid flexure, and rectum, was in the right thorax. The large bowel contained scybala, the small bowel was empty, and both were deeply congested. The large intestine was found lying along the whole length of the chest, with the mesentery anteriorly, the small intestine being posterior to them. On opening the abdomen the peritoneum was found to contain a few ounces of clear, dark-greenish fluid. The stomach was much congested and ecchymosed, with a punctiform hæmorrhage on its anterior wall. The viscus contained brown semi-digested food, similar to that drawn off by the aspirator. There can be little doubt that at the time of aspiration the stomach was in the thorax, and that it was from this organ that the fluid was withdrawn. The nature of the fluid and the presence of the above-mentioned punctiform hæmorrhage go far to confirm this supposition. All the other organs were healthy.

SOUTH DEVON AND EAST CORNWALL HOSPITAL, PLYMOUTH.

STRANGULATED EPIDIDYMIS OF INCOMPLETELY DESCENDED TESTIS PRODUCING SYMPTOMS LIKE THOSE OF STRANGULATED HERNIA; CASTRATION; CURE.

(Under the care of Mr. WHIPPLE.)

A SURGEON is not uncommonly asked to see a patient with supposed hernia, which on examination is found to be an epididymitis, possibly of a retained testis, but has usually no difficulty in distinguishing one from the other. Cases in which the resemblance is as close as in the cases under Mr. Whipple here recorded are, however, very rare. Dr. H. H. Johnson[1] reports a general inflammation of the spermatic cord mistaken for hernia, and treated at first with a truss. He found a hard swelling extending from midway between the anterior superior spinous process of the ilium to the pubes down to the testis. He removed the testis and cord. The latter measured seven inches in circumference, and was well advanced towards suppuration. Recovery was uninterrupted. Dr. Ségond[2] has also published a case in which a suppurating cyst of the epididymis was mistaken for hernia. Other examples are referred to in the remarks appended to the case. For the notes we are indebted to Mr. W. Gifford Nash, house surgeon.

A. H——, aged sixteen, was admitted to hospital on Jan. 21st, 1891, at 4.45 P.M. He stated that for seven or eight years he had noticed a lump in his left groin which occasionally disappeared within his abdomen. This he believed to be his left testicle. On the previous day at 4 P.M. he strained himself and felt something give way in the left groin. At 2 A.M. on the morning of admission he noticed a lump in the groin, and at 8 A.M. began to vomit. He consulted a medical man, who diagnosed a strangulated hernia, and sent him to the hospital with a note to say he had had stercoraceous vomiting. Bowels acted slightly at 2 P.M., before that two days ago. In the left groin there was an hour-glass-shaped swelling. The lower half of this was the left testicle lying in the upper part of the scrotum. The upper, lying over the external abdominal ring, about the size of a hen's egg, was very tense, quite dull on percussion, and gave no impulse on coughing. The pubes was shaved and washed, and at 5.15 P.M. methylene was given, and Mr. Whipple made an incision over the upper swelling, and a dark-coloured tense sac was exposed. This was opened and some blood-stained fluid gushed out. A dark, claret-coloured coiled mass presented, and after careful examination this was made out to be a much-enlarged strangulated epididymis. Lying in the lower half of the sac was the body of the testis, about normal size, and attached to it and forming a circle round its hilum was a band of omentum. This tag was torn through. The epididymis appeared to be twisted twice on its own axis. This was pulled down and untwisted; the proximal part of the omentum, which was unaltered in appearance, was returned within the abdomen through a large inguinal canal. The epididymis was ligatured as high up as possible, and it and the testis were removed. The pedicle was dropped back into the abdomen. The sac was ligatured in two halves and cut away, and the pillars of the external abdominal ring sutured. A small tube was inserted and the wound sutured. On the 24th the tube was omitted, on the 27th sutures were removed. The patient got up on Feb. 2nd, and was discharged on the 7th. The specimen removed was sent to the Museum of the Royal College of Surgeons of England, where Mr. J. H. Targett very kindly examined it, and reported as follows: "On re-examining the specimen, I can see no other explanation than that you have offered—viz., that the epididymis, or, to speak more accurately, the mesorchium, has become twisted rather like an ovarian pedicle may do, and so the circulation has become obstructed, for there is a well-marked groove at the base of the epididymis, where, I presume, the twisting has taken place. I have not met with a similar complicated strangulated undescended testicle, nor do I know of any case recorded in the ordinary text-books."

Remarks by Mr. W. G. NASH.—There seems to be no doubt that this was a case of strangulation of the epididymis, and not traumatic or gonorrhœal inflammation. The strangulation was caused by swelling, due to twisting of the epididymis (mesorchium). The seat of strangulation was the external abdominal ring. The epididymis, as is usually the case in these misplaced testes, did not assume the usual canoe shape or bear its usual relations to the testis. The body of the testis itself was not altered in appearance. The cause of the incomplete descent of the testis, no doubt, was the band of omentum which surrounded the hilum of the testis. I have looked through the surgeries of Gross, Ashhurst, Holmes and Hulke, Erichsen, Bryant, and Heath, and cannot find any similar case, but several instances of inflammation of misplaced testes are found, one or two of which gave rise to very similar symptoms. Curling[3] mentions a case in which a testis in the groin became inflamed, was mistaken for a strangulated hernia, and operated on. When the nature of the case was discovered castration was performed. Jacobson[4] relates two cases of inflamed testes in groin, one of which proved fatal from peritonitis. With regard to the diagnosis of hernia in our case, the existence of an hour-glass-shaped swelling in the groin, the lower half of which was the testis and the upper a tense elastic swelling, giving no impulse on coughing, lying over the external abdominal ring and extending along the inguinal canal, taken with the general symptoms of strangulated hernia, pointed very strongly to this being the nature of the case.

[1] Sajous, vol. iii., c. 27, 1889. Boston Med. and Surg. Journal, May 2nd, 1888. [2] La France Médicale, Jan. 14th, 1888.

[3] Diseases of Testis, p. 8

[4] Holmes and Hulke: System of Surgery, vol. iii., p. 470

Medical Societies.

ROYAL MEDICAL & CHIRURGICAL SOCIETY.

Paget's Disease of the Nipple and Breast.

AN ordinary meeting of this Society was held on May 12th, the President, Mr. Timothy Holmes, in the chair.

Mr. BOWLBY read a paper on Thirteen Cases of Paget's Disease of the Nipple, with special reference to the causation of the malady by psorosperms. He gave a short account of thirteen cases of Paget's disease of the nipple, and, after a brief review of cases already recorded, analysed those described by himself. A more complete description of the special clinical characters of the disease as demonstrated by the cases detailed was then given. The histology of the

morbid tissues was described, and the observations of Messrs. Wickham and Darier as to the presence of bodies resembling psorosperms were commented on. The author remarked that bodies of the same nature as those described by the French observers were to be found in all the cases which formed the subject of the paper, and expressed the opinion that these bodies were probably psorosperms. The pathology of Paget's disease was then discussed; and after giving reasons for believing that all changes in the breast were secondary to those in the nipple, and were not in any way causative of the so-called eczema, the author expressed the opinion that the disease was parasitic in its origin, and then discussed the influence of the psorosperms in causing cancer. He concluded by expressing the opinion that there was no evidence that the cancerous growths in the cases under consideration were directly due to any specific action of the psorosperms, and gave various reasons for such a conclusion.

Mr. JONATHAN HUTCHINSON, jun., likewise contributed a paper on Paget's Disease of the Breast. He reported the results of examination of five cases of chronic eczema of the breast with reference to the occurrence of parasitic bodies in that disease (coccidia or psorosperms). Specimens were shown illustrating various appearances in the surface epithelium, which the writer believed confirmed M. Darier's statement that coccidia were to be found, and sometimes in great numbers. These appearances had not been found in cases of eczema other than the chronic disease known as Paget's disease; neither were they found in all supposed examples of the latter. The writer had observed them in three out of the five cases examined. Brief reports of each were given, and the subject was illustrated by lantern demonstrations of micro-photographs, &c.

Mr. D'ARCY POWER said that he had been working at the origin of cancer by inoculating portions of malignant growth into animals. He had taken a piece of affected tissue from the last case Mr. Bowlby had described, and had inoculated it into a rat. On the fourth day a thin puriform discharge appeared containing epithelial cells and many bodies like those described in the paper. The discharge had since disappeared and reappeared at the inoculation wound on two or three occasions. He had inoculated other varieties of cancer into animals without producing any result. He remarked that in the rabbit, if psorosperms were inoculated, a similar puriform discharge would result.

Dr. THIN remarked on the increased knowledge we had of this disease since the publication of the papers by Mr. Butlin and himself ten years ago. At that time it was the generally received doctrine that the disease was a true eczema, which eventually led to cancer of the breast. The view which he had advocated that the disease was not an eczema nor any form of recognised skin disease was soon afterwards confirmed, and was now universally accepted. The hypothesis which he had suggested that the destructive dermatitis was due to a change at the mouths of the ducts, essentially cancerous in its nature, although a long time might elapse before it led to proliferation of cancerous epithelium was, he held, although not proved by anatomical investigation, still one that had much to recommend it. The destructive agent, of whatever nature it was, was sufficiently powerful to destroy the epidermis and break up the connective tissue in the papillary layer of the skin—effects which were reconcilable with the hypothesis that the poison was cancerous. He considered the continued use of the term "eczema" objectionable, as possibly leading to delay in operative interference. He had recently examined the tissues in a patient of his own with the special object of detecting the appearances described as characteristic of psorosperms. He had found them absent. On examination of the preparations from his early cases, he had found all the characteristic appearances recently described, but saw no reason to consider that they were due to the presence of parasites, as he was able to trace them in an unbroken series of changes which took place in the cells of the epidermis, the first set of changes being unmistakably in true epidermic cells, and the sequence up to the most developed appearances being continuous. Similar changes were found in other conditions, and he specially referred to drawings of cells in epithelioma in his paper in the fifty-ninth volume of the Medical and Chirurgical Transactions, which resembled in every respect the so-called typical psorosperms recently described.

Mr. JONATHAN HUTCHINSON, jun., admitted the difficulty of deciding whether these bodies were really coccidia or not. In the next case in the living subject that he met with he would take a scraping and examine it on a warm stage, to see whether amœboid movements could be observed such as could be demonstrated in the coccidia from the rabbit's liver. The difference in their reaction to dyes might be due to the fact that they were different varieties of organisms. Though he preserved an open mind with regard to them, he thought they fitted in very well with the pathology of the disease.

Adjourned Debate on the Treatment of Surgical Tubercular Diseases by Tuberculin.

An extraordinary meeting of this Society was held on May 7th, the President, Mr. Timothy Holmes, in the chair.

The debate was resumed by Mr. BARWELL, who could not help contrasting the tone of the paper with the results which had been proclaimed elsewhere, and he animadverted on the facts that a fluid the nature of which was kept quite secret was vaunted as a certain cure for one of the most formidable complaints, that trivial improvements in the condition of tuberculous patients were freely circulated as indications that the cure of deeper mischief might be obtained, and that hundreds and thousands of people were induced to undertake a long and perilous journey to undergo a treatment which could at the best only be beneficial in as many months as they could stay weeks. Mr. Cheyne's paper took a very different tone, but it was the more incumbent that his conclusions should be carefully examined. Beginning with the action of the drug, the pyrexia induced by the first two or three injections, which was sometimes so intense as to prove fatal, was frequently alarming. He was unable to make out any essential difference between these febrile attacks and those which followed the absorption or injection of septic matter. He alluded to the case of wounds in the course of which signs of pyæmia came on, which could be at once stopped if the wound could be thoroughly washed out and cleansed so as to prevent the formation of any fresh sepsis, and consequently of any fresh absorption. In fact, these attacks were very like, if not identical with, those which followed injections of Koch's fluid. These febrile attacks (induced by Koch's lymph) were usually accompanied by albuminuria; frequently, nay generally, by enlargements of the spleen and liver, together with purpuric and other forms of skin eruption, and sometimes by an icteroid or earthy discolouration of the skin. He did not wish to be understood to say more than he really meant. He did not say that Koch's lymph was only sepsin, for that was evidently not the case. It consisted of glycerine, a certain or rather an uncertain amount of peptone, some extractives, with its essential principle, an alkaloid, which Koch estimated to be present to the extent of 1 per cent. This alkaloid was extremely poisonous, and was, he thought, closely related to sepsin. He did not gather what means there were of regulating or standardising the strength, nor did he know of any means by which this could be accomplished. He urged that under these circumstances the product must necessarily be of uncertain composition; they might measure with the utmost care the bulk of the fluid which they injected, and yet have a very vague idea as to the amount of poisonous alkaloid they were about to administer. This explained many of the alarming and some of the fatal symptoms which followed the first and second injections. To make matters still more difficult, they were told that if the operator began with a small dose he was apt to produce that tolerance of which Mr. Cheyne had spoken as frustrating any further hopes from subsequent treatment. He observed that this particular alkaloid had never, like that of anthrax, been isolated or crystallised out. Going back to the transient septicæmia to which he had alluded as a complication of wounds, he pointed out that during such an attack the granulations underwent certain changes, sometimes becoming dry and shrivelled, but usually increasing in size and undergoing gelatinisation. If the fever were high the granulations probably shrivelled or sloughed away. Mr. Cheyne had shown them some very beautiful photographs of tubercular granulations undergoing inflammation as a consequence of the injections, but he confessed to an inability to detect any signs of a peculiar or specific action. It was true that in most of these specimens the tubercle was undergoing infiltration by leucocytes, and was possibly in the way of dying or being destroyed thereby. He did not admit, however, that this was the result of such injections. They would want a control experiment where the effects of other sorts of inflammation were observed. He might be told that

these other forms of inflammation did not attack tubercular tissue in particular, while it was asserted that tuberculin did so with such certainty as to prove a valuable means of diagnosis; but there had been too many cases reported in which precisely the opposite effects had been noted. It was not claimed that the injections deprived the bacilli of their infectious qualities, nor did it confer upon tissues any additional powers of resistance, and this might account for the widespread tuberculous dissemination testified to by Virchow and confirmed by Volkmann. After all, however, it was by the clinical and practical results of the injections that the method would stand or fall. Without going abroad for statistics, it was significant that Mr. Hutchinson, with his vast opportunities, had not seen a single case of cured lupus, and Dr. Heron's cases of phthisis afforded no instance of cure. As to Mr. Cheyne's ten cases of lupus, one had been sent out of the hospital in December last, but came back in two months for treatment; moreover, eight out of the ten cases had been subjected concurrently to pretty severe surgical treatment. As to his joint cases, in these, too, surgical measures were resorted to, and he could not see that the fluid had in any way assisted. There were two cases of dactylitis, presumably strumous, neither of which was benefited. He concluded with the remark that the promises made in respect of this fluid had been unfulfilled.

Dr. DOUGLAS POWELL observed that the paper was full of details and observations of the highest merit, and it seemed to raise the subject upon a platform, and to place the matter in such a position as to authorise the hope of their being able to build up further observations. His own experience of this treatment had been but small compared with that of the author, and comprised cases which from their very nature were much less adapted for combined clinical and pathological observation than those which the author had placed before them. He did not think that one could speak at present from any mature conviction in respect to the results to be obtained by this method of treatment, but one was obliged to express a certain measure of disappointment at the results obtained so far. Yet he was bound to say, and it was his reason for speaking, that his own feelings with regard to the treatment were not in accordance with those which had just been expressed. His own cases of tubercular lung diseases were thirteen in number, and they were cases which had been thought suitable for treatment when it was first introduced into this country in the beginning of December. He alluded briefly to these cases, merely giving his impressions with regard thereto. One was a case of double tubercular pleurisy with effusion, associated with a hectic temperature and signs of tubercular mischief at one apex. This patient did not improve under treatment; the hectic temperature remained the same, and after twelve inoculations he appeared exhausted by the treatment, which was discontinued. He was unable to say that the patient's condition was materially altered by the treatment. He died five weeks after its cessation, death being due to acute general tuberculosis, which declared itself three days before his death. Then there were two cases of active double second-stage tubercular pulmonary phthisis; in one the disease went on unchecked, while in the other there was some temporary improvement, which might or might not have been due to the treatment. This patient was now, three months after the commencement of the treatment and three weeks after its cessation, presenting some slight but decided advance in her physical signs. There was one case of active third-stage phthisis, marked by the rapid formation of cavities, high temperature, night sweats, &c. This patient was injected a few times, but there were no results, and so the treatment was not persisted in. There was one case of old tubercular excavation in the right lung, with commencing tubercular deposit in the left, the patient being the subject of syphilis. The old lung disease did not in any way react to treatment so far as one could judge, but the other lung with recent disease seemed to be improved. After some fifty or sixty inoculations, extending over a period of several weeks, they came to the conclusion that no benefit was likely to attend continuance of the treatment. They were influenced also by the view that by continuing the treatment, which apparently gave no hope of benefit, they might enfeeble the patient, and leave him to his old enemy, the syphilis. After a while they put him on tonics, and he left the hospital in fairly good condition. In one case there was a history of tubercular phthisis of two years' intermittent duration; this patient decidedly improved in general health, and was under treatment for two months; she then became pregnant, and it was thought advisable to discontinue the treatment. Another case was one of dense tubercular consolidation of the middle portion of the right lung without necrotic foci, but there were bacilli in the sputum and the usual collateral symptoms. After continuing the treatment for some six weeks, the softening process in the right lung seemed to be accelerated; at one time this case caused them very considerable anxiety on account of the rapid softening of the lung and of the increased septic symptoms that arose. She had rheumatic pains in her joints, a temperature which became hectic, and there was slight albuminuria with profuse sweating and obstinate vomiting; although these symptoms came on twelve or fifteen days after the injections had been discontinued, he thought they were due to contamination from the rapid process of softening. Then he began treatment; expectoration diminished, the hectic diminished, and she picked up appetite, health, and strength, and was now in a better condition than when first taken in hand. One case was of scattered caseous phthisis, most marked about the right upper scapular region, and with a hectic temperature; the cough was not very troublesome and was scanty, but bacilli were present in the sputum. This patient improved in general health, the cough diminished, the phthisical signs which were scattered through the lungs gradually cleared up, and the physical signs in the right scapular region were represented by a small cavity. She had been more or less under treatment since Dec. 15th, and they had recently made out that during that time she had lost three pounds in weight. There were four cases of ancient one-sided phthisis, all of which did extremely well; his only difficulty in regard to these cases was whether they had done well in spite of the treatment, or whether that had assisted them on the road to recovery. He then alluded to three cases of lupus, in two of which marked improvement resulted at first; on ceasing the treatment, however, they had relapsed considerably; they were now adopting other measures. In the third the lupus was limited to the eyelid; there was a history of blindness consecutive to illness attended by acute headache, and each time they injected her she had very severe headache. They were afraid of lighting up an abscess in the brain, so they desisted. He had kept no account of the much more numerous cases in which he had declined to adopt this method for sufficient reasons. He did not pretend that this was a very brilliant series of cases, but throughout all the inoculations he had never experienced any of those terrible catastrophes which one heard of in connexion with this treatment. In only one case, of lupus, was he at all anxious in consequence of reaction after a dose of seven milligrammes; the reaction was very severe, but the patient recovered perfectly after three or four hours, and the symptoms did not recur subsequently. The only case in which he felt any anxiety in regard to the treatment was one in which the results seemed to be excessive, and to have involved the danger of pyæmia. He observed that the chief incident in the second stage of phthisis was sepsis. He did not know of any symptoms in the second stage which could not be explained by the absorption of retained material. If they could clean them out they would have none of the second-stage hectic symptoms. These were, then, a necessary condition of the eliminatory period of phthisis, and their whole treatment of this period was to sustain the patient by those measures flippantly alluded to by the author under the head of "expectant" treatment. These were the only measures which were attended with any amount of success. The question was, could they hasten this process of elimination? Personally, he was convinced they could. The question was, in what particular cases could they do so? In some cases the elimination appeared to him to be too stormy and rapid; but he believed there was a certain number of cases in which one might employ tuberculin without danger. That was a question purely for experience to decide. He raised the question as to whether the employment of the frequent and repeated doses advocated by the author was adapted to the treatment of internal tuberculosis. It must be borne in mind that they were unable to follow these cases like the surgeon could follow his, and therefore repeated and too frequent employment of inoculations would probably be found unsuitable for many of these cases. What was their object in using tuberculin in these cases? It seemed to him to be to stimulate the diseased tissues, and to enable the tubercular tissue to get the better of the enemy. The

author had shown them some most interesting pictures of the battlefields in which the phagocytes were engaged in dealing with the tubercular cells. The only upshot of this stimulation of the tissue surrounding the tubercle was to bring about a fibroid change, which they knew was the natural safeguard against the further spread of the infection. He was afraid that this formation of fibroid tissue was seriously imperilled by the continuance of the treatment for too long a time or by too frequent repetitions. He referred to a very interesting observation of Dr. Dreschfeld, in which it was pointed out that extending tubercle was frequently led up to or preceded by a catarrh which provided the material on which the bacilli could feed. In early cases of tubercle, in which there were small scattered tubercles over restricted areas surrounded by lobular catarrh, the natural process was a multiple necrosis; here he thought tuberculin might successfully be used to hasten the process and to stimulate the secondary occurrence of fibroid changes. He thought that when they had obtained a certain measure of success it was better to hold their hand and to trust to hygienic and general measures to complete the obsolescence of the tubercle. The author suggested that the standstill might be maintained for a considerable period of time by the occasional repetition of the inoculation; he doubted, however, whether this standstill was really to be attributed to the treatment. They all knew that this tendency to arrest and recurrence was part of the natural history of the disease. The author's observation as to the action of tuberculin in bringing about the healing of wounds was most interesting and instructive, and at first sight rather told against what he (the speaker) had been saying. He was still hopeful that tuberculin might in some cases of internal tuberculosis aid in rendering the disease quiescent.

Mr. HOWARD MARSH said it was one of the best papers he had ever listened to, being at once judicial and temperate; but they were all anxious to know what were the author's conclusions as to the practical value of this method of treatment. They were anxious to know whether it was a plenary remedy, able to deal single-handed with the disease—to be regarded in the light of an antidote, like mercury for syphilis, or, failing that, whether it was a useful accessory to other forms of treatment. With regard to the first question, he feared that it was necessary to come to the conclusion that it was not. He observed that the author discouraged recourse to this treatment in the early stages of disease. That was disappointing, and seemed to him an abandonment of the position altogether; because if a remedy was powerless against incipient disease, there was little likelihood of its being of service at a later stage.

As to the second question, he observed there were two methods by which surgical tuberculosis was treated. In the first place, there was the treatment by rest and change of air &c. Many of them were convinced nowadays that this method could be thoroughly relied upon, and a very satisfactory result could be obtained. He was prepared to produce a considerable number of children who had been suffering from tuberculous disease, who after a time had quite recovered with freely movable joints. These, too, were cases which would be five, ten, or fifteen years old, so that ample time had elapsed to see whether they were really cures or not. The treatment by rest must be carried through, the cases passing through several well-defined stages; indeed, the great objection to that treatment was the time over which it extended, taking as it did from six months to a year. It would have been very satisfactory if the author could have assured them that by the use of tuberculin, associated with this treatment, the months could be reduced to weeks. That, however, was evidently not the case, because he disadvised the remedy in the early stage. The second plan was the operative method of treatment of surgical tuberculosis; the principle of this method was to cut away the diseased tissues, rather than to preserve them by killing the disease; this method was certainly open to serious objections. The deposit of tubercle in the joint of a child was not limited to the synovial membrane, but involved the articular ends of the bones. Cases in which this treatment by free excision has been carried out had not been freely recorded, but they would be full of interest. It was clear that if a joint was treated in this way the epiphyses must be sacrificed and the ultimate issue of the case unsatisfactory. It would, indeed, be happy if this sacrifice of necessary structures could be avoided. There was no evidence that the extent of these operations could be circumscribed. Then there was the radical objection to this method that it did not cure the disease, but simply cut away the parts which were diseased. He instanced the case of a patient with a tuberculous testicle; the surgeon said to him, "I must remove it, and then I will expedite the healing of the wound with injections of tuberculin." If the disease recurred in the other testicle, the procedure would have to be repeated. That looked very much like locking the stable door after the horse had been stolen, and if he were the surgeon he would feel disposed to say, with the general, "One more such victory as this and I am undone." He believed that the rapid way in which these wounds healed had had a very misleading effect on their estimate of the cases. Surgeons were so pleased with the rapidity of cure after excision that they did not study sufficiently what the ultimate condition of the limb was likely to be. If Koch's treatment did nothing more than help in the healing up of an aseptic wound, then it did not amount to much, for they were accustomed to seeing the wound after aseptic excisions heal by primary union.

Dr. DELÉPINE showed various microscopical sections bearing on the changes which took place in tubercles after inoculation. When he saw the photographs on the screen it occurred to him that he had specimens showing the same kind of thing of his own, and he had looked out specimens among diseases of synovial membranes in which decaying epithelioid cells were found which closely resembled the micro-photographs shown by the author. These were taken from cases operated on six years ago, before Koch's treatment was known. They were therefore interesting in view of the possible use that might be made of the pathological facts that had been brought forward to show that the changes were simply those of an ordinary inflammatory process. He observed that there was a tendency to attribute to tubercle a number of properties unknown to pathologists before. When Koch published his first communication he ventured to show that such changes as he proposed to give as characteristic of the action of this fluid on tubercle were rather against than in favour of his method. These specimens seemed to show that there was nothing specific in the action of the fluid, and the author held the same opinion. The action of the injections was therefore neither specific nor selective.

Dr. HIME of Bradford said he had not heard the original paper, but on reading the abstracts he had been struck by the caution displayed by the author. It seemed as if Mr. Cheyne was sitting on the rail and was keeping himself ready to drop on either side. That position he thought was highly meritorious. He thought it would be exceedingly unwise of anyone to express a definite opinion on such an important matter at the present juncture. He need not tell them that cases of phthisis were not to be pronounced cured in a day, and the same remark applied to lupus. He commented upon the very different views expressed, and the exceeding laudation on the one hand and the exceedingly depressing views on the other. He thought they might congratulate themselves upon not having rushed to conclusions; the public might have been misled by extravagant claims in the daily press, but the profession had taken some time to make up their minds. He ventured to differ chiefly upon matters of fact with the gentleman who led off the discussion. He (Mr. Barwell) said that the reaction which resulted from the injection of the tuberculin was indistinguishable from that of septicæmia; that was a remarkable statement, and one of gravity. [Mr. Barwell protested that he said "very like," but not "indistinguishable."] The actual words were "very little difference," but with all respect he submitted that there was a very great difference. First of all, the blood did not become septic, there were never any metastatic abscesses, the temperature was not similar, and the whole picture was not that of septic infection. Moreover, it was not characteristic of septic infection that the larger the dose and the oftener it was given the less was the result. Again, Mr. Barwell had said that albuminuria was a frequent result. [Mr. Barwell remarked that he said it sometimes occurred.] He accepted the correction, but he had taken the words down. In any case it was not his experience, or that of the majority of observers who had tried the method. He hoped, too, that they would not accept Mr. Barwell's assertion that the tubercle bacillus was an animal that sometimes died infected by its own poisons. The nature of the reaction and its specific character was what they had

before them. To curative results, both here and abroad, he could not then refer; but he himself had seen results which he thought were very gratifying. It was impossible to say at this stage that the cases were definitely cured, but when a patient came, having lost from one to one and a half pound a week for months, with night sweats, anorexia, and bacilli in sputum, and when at the end of some six or eight weeks these symptoms had disappeared, the patient having gained in weight and the general condition being satisfactory, he was inclined to call this result gratifying. Had he obtained the same result from cod-liver oil, steel, &c., he would have felt very grateful. It was enough for him that the patient got better. Every day that he continued in this improved condition of health the greater were his powers of resistance and the better able was he to resist the inroads of the "animals," as Mr. Barwell called them—the bacilli. He had seen one or two cases in which anomalous effects had occurred, but he had seen none of the alarming results reported by other observers. He could quite understand that they should occur with doses such as he had seen administered at Berlin. He referred to a patient of his own to whom he had administered one milligramme for lupus; that produced very severe general and local symptoms, the temperature running up to 105° F., with stupor &c. He asked what would have been the result if, instead of a milligramme, he had given a centigramme. He insisted on the importance of smaller doses.

Dr. THEODORE WILLIAMS said he would not have spoken had the author not introduced the element of internal tuberculosis in the form of phthisis. He observed that the moderate tone of the paper contrasted strikingly with Koch's original contribution. They were told that incipient phthisis could be cured in from four to six weeks, and that any recurrence could be treated in the same way. There was nothing of this kind in the paper presented by the author, which was expressive less of satisfaction at the results obtained than of those which it was hoped might be obtained in the future. He thought the author's modified treatment was an improvement on the original, but he observed that his difficulty was to get the temperature down and to arrive at a state of tolerance. None of his own cases had been of this character. He mentioned a typical case of initial phthisis with slight physical signs at the apex of one lung, so slight as to be almost a matter of doubt were it not that he had found bacilli in the sputum. There was at first no pyrexia, but the second time he saw her the temperature was up to about 100° F. They commenced the treatment with this slight consolidation at one apex, the dose being a milligramme, subsequently increased to 1·5 mgr. There was always a reaction, and he was sorry to say the case did very badly; after from ten to fourteen injections a considerable cavity formed in the lung, and then, to his horror, after the fifteenth injection phthisical signs appeared on the other side. This might, it was true, have occurred anyhow, but it was not in accordance with his experience of such cases. Treatment was carried out on the precise lines laid down, and the lymph had been procured from Berlin. He inclined to the view that the patient under ordinary treatment would not have been in that state. They heard nothing in the paper about curing the disease, only about keeping it at a standstill. They all knew that phthisis was not to be cured in a hurry. He was unable to congratulate the author upon his cases; two of them, described as hopeless at the beginning, died. This was scarcely the *status quo*. He had read the cases very carefully, and thought they were a very melancholy series. He had submitted four cases to the treatment, most of them being typical cases of incipient phthisis. There was no sign of a cavity, they all had a few bacilli in the sputum, and there was a certain amount of pyrexia, and in one or two the physical signs were doubtful. In each, within three or four weeks, distinct cavities formed. The bacilli did not decrease in numbers, the great feature being that the sputum contained great quantities of lung tissue. It might be said that this was the natural way of curing the disease—namely, by setting up a necrosis and getting rid of the dead products. But he urged that the formation of cavities distinctly lessened the patient's chance of recovery. In every one of the cases in which there was a pre-existing cavity or cavities, it either extended or there was evidence of extension of the tuberculous process to other parts of the lung. These cases had been carefully examined, more so probably than any other series of cases. He pointed out that these first-stage cases as a rule did well under any treatment, and mentioned a case in which a residence at St. Moritz since January had brought about a cessation of all symptoms. That was the class of case which Koch said could be cured by his method; on the contrary, while they might be arrested in a number of ways, his way was the way to kill them. He thought that the treatment might possibly become of use, but it would have to be modified.

Dr. ABRAHAM said he felt the same disappointment as many others at the results, which had not fulfilled their expectations. He thought, however, in spite of what he had heard, that most of those who had tried tuberculin in a systematic way would have to admit that some benefit had accrued. In the cases he himself had to deal with they had not been uninfluenced for good by the treatment, but one or two had been decidedly worse. The large majority, however, had distinctly improved temporarily, if not permanently. He used small doses at intervals of several days. He said that if tuberculin had a specific effect upon tissues produced by the presence of bacilli, they would expect some relation to exist between the amount of such tissue and the intensity of the reaction. No such ratio, however, was observed. In some cases with a small amount of tuberculous tissue he had seen severe local and constitutional symptoms, and *vice versâ*. In other cases, although there had been abundance of bacilli in the sputum and physical signs in the lungs, there had been scarcely any reaction. He thought that the primary action of tuberculin was upon the nervous centres, and considered that the microscopical specimens shown favoured the view that the changes produced might be obtained by any method which set the leucocytes free. In fact they were purely inflammatory. He thought the author's plan of treatment by multiple injections was likely to prove irksome, and could not be employed unless it could be shown that the game was worth the candle. He agreed that there was small danger of the disease being disseminated. In only one case had he observed any increase of the tubercular disease. He mentioned that of the two guinea-pigs brought before the Pathological Society by Dr. Crookshank, one died shortly afterwards with its organs full of tubercle, while the other one, treated in exactly the same way, was still living. Mr. Cheyne had said little as to the diagnostic value of the remedy, which indeed did not seem to amount to much. Two cases of lupus which he was treating by a combination of Koch's treatment and resorcin were doing remarkably well.

Dr. DRYSDALE alluded to the rush to Berlin, but thought that a little enthusiasm was pardonable when it was a question of curing a disease which killed one-fifth of our population. He had been allowed to visit the London clinics, but the impression left upon his mind was most unfavourable. He expected from what he had read to see a remedy which would be as safe and as certain as iodide of potassium in tertiary syphilis, the patient getting well and not being injured in any way. He was quite unable to say that he had seen anything like a cure in any of the cases. As to the patients reported as benefited, he observed that it was a common experience for such patients to improve for a time with or without treatment. Of the cases of lupus he had seen, only two were benefited at all, and even these were not cured. He had been anxious to employ the method, but after what he had seen he would not feel justified in doing so. He mentioned that a gentleman who had examined a thousand specimens of sputa at Davos had been unable to detect any change in number or behaviour of bacilli consequent on the treatment.

Dr. WETHERED said one could not form an adequate idea of the treatment by casual visits to hospitals. He had followed out carefully fifty cases, thirty-five of them being of phthisis—seventeen of the first stage, nine of the second, and nine of the third. In not a single case did any harm result. Though his numbers were small, they justified the conclusion that in the first and second stages of phthisis some improvement might be expected. He had seen no instance of the formation of a cavity. He insisted upon the great amelioration of symptoms which occurred during treatment, more especially in respect of the cough, of which he gave two remarkable examples. The breathing also improved, the night sweats disappeared, and the appetite improved. He did not anticipate any good effects from large doses, doses of from two to three milligrammes every two or three days, so long as there was a reaction, being sufficient. He never carried the dose beyond twenty milligrammes, and he thought it was a mistake to exceed

these doses. He thought this treatment had been prematurely cried down.

Dr. SQUIRE said he had used this remedy continuously since the first week in December. His results were not very satisfactory in his surgical cases, and he could not pretend to be able to judge whether the cases had got better under this than under ordinary treatment. In any case, the surgeons had taken the first opportunity of discontinuing the treatment. He admitted that perhaps with larger doses or by some other method more satisfactory results might have been obtained. He pointed out that the question of doses was one of very great importance; if increasing doses were required in surgical cases, they would not do in medical cases. They did not want in phthisis to produce rapid destruction and elimination of tubercle, but a slow process which would allow the fibroid changes to hem in the infective tissues. This result, he thought, was more likely to be obtained by small than by large doses. He remarked that the non-ulcerative lupus was apparently not affected in all. In ulcerative cases there was some considerable improvement, but not of a permanent kind.

Mr. HURRY FENWICK said that after an experience of about ninety cases of genito-urinary tuberculosis he started using Koch's treatment, and described his result under three heads: (1) dangers; (2) ocular appearances of mucous membrane; and (3) therapeutic value. The dangers were certainly real. In his first case there was septic pyelitis, and the man died in a fortnight. There was also danger of swelling taking place in the urethra or neck of the bladder, leading to retention or suppression of urine. Lastly, there was the danger of rapid sloughing out of material from the bladder followed by profuse hæmorrhage, an instance of which he mentioned. With regard to the ocular appearances, he had noticed the formation of small mulberry phlyctenulæ, and, what was more extraordinary, the formation of deposits which had not been previously seen. In regard to its therapeutic value, he thought it might be of use in a very early stage of tuberculosis of the bladder, kidney, or prostate, and its effect might be accurately watched by means of the cystoscope.

Mr. CHEYNE, in reply, admitted that he was still sitting on a rail, and did not propose to get down for the time being. He would have liked to have asked Mr. Barwell where his extraordinary investigations took place. By sepsis he only meant the process due to the specific organism. He pointed out that his own method bore on the frequency rather than the amount of the dose. He would be quite content to go on with half a milligramme for several weeks. He would like to see physicians try that plan before abandoning the method. They were under no obligation to give all the injections themselves. He said that in his own cases when he left off the treatment the disease recurred, and that was what he meant by a standstill. He did not argue against the remedy in incipient disease, but he would not advise its use. In reference to Dr. Delépine's remarks, he pointed out that the specific nature of the remedy was in the selection rather than in any special changes. He himself had plenty of specimens showing the same thing. He did not agree that cases of phthisis naturally inclined to recovery. If phthisis were such a curable disease, it was surprising that physicians should have made such a rush to Berlin to learn something about its treatment. It was the physicians, and not the surgeons, who had led the way there.

CLINICAL SOCIETY OF LONDON.

Resection of Intestine by Senn's Method.—Sequestrotomy. Trephining for Cerebral Abscess.

AN ordinary meeting of this Society took place on May 8th, Mr. Berkeley Hill, Vice-President, in the chair.

Mr. ARBUTHNOT LANE read a paper on two cases of Resection of Intestine by Senn's Method. The first was a case of Littre's hernia occurring in a woman aged fifty-three. It was femoral, and situated on the right side. On exposing the sac it was found to be much inflamed, its contents stinking and pultaceous, and the knuckle of bowel in an obviously irrecoverable condition. Having thoroughly cleansed the bowel and sac, the abdomen was opened in the middle line, and the loop of intestine, whose segment had been strangulated, was drawn out from the abdomen, the constriction at the femoral ring having been previously divided. It was then seen that only a portion of the calibre of the bowel had been included in the sac, and that its condition was irrecoverable. Subsequent examination of the strangulated portion showed that, though there was no obvious perforation, nothing remained in many parts of its wall but the peritoneal coat. About three inches of the bowel, including the strangulated area, were excised, and the mesentery belonging to it ligatured. The divided ends of the proximal and distal segments of the intestine were closed by inverting their coats and by running along them a continuous Lembert's suture. Incisions were made in the convexities of the segments about three inches from their closed ends, and into these Senn's plates were introduced. The apertures were then brought accurately together by means of the silk ligatures. After this two continuous Lembert's sutures were applied to render the apposition of the plates more perfect, and a broad graft of omentum was placed around and fixed by means of several fine silk sutures. For a few days the patient was nourished by enemata, and later by peptonised milk. Twelve days after the operation she was enjoying a fish dinner. She experienced no pain or discomfort worth mentioning, and her abdomen remained soft and comfortable throughout. It was necessary to give her some opium for a few days after the operation to restrain a tendency to diarrhœa. She left the hospital three weeks and four days after the operation. The second case was in a woman aged fifty-five, who had suffered from a strangulated femoral hernia for five days before her admission. She was very collapsed, and her abdomen was much distended. It was at once apparent that she could not stand any very prolonged operation. The sac was much inflamed, and contained a quantity of pus and fæces and a perforated loop of small intestine. This was ligatured and carefully cleansed, the constriction being then divided. The abdomen was opened and the damaged loop drawn out. About four inches of bowel were excised, and the ends closed and the plates inserted. It was then found that the proximal gut was very rotten, and the sutures attached to the plates tore through the softened bowel frequently. Finally, the plates were brought together in much haste, as the patient had become moribund, and a graft of omentum was attached. Mr. Lane regretted very much that he had not time to remove a further portion of the proximal bowel, but the patient's condition rendered any further delay impossible. She lived five days and two hours, the bowel yielding two hours before her death, which resulted from the escape of the intestinal contents into the peritoneal cavity through a small slough in the proximal bowel. Mr. Lane urged that the following treatment should be adopted in future:—1. That in cases where strangulated loop of intestine was gangrenous or ulcerated, the proximal and distal portions of the intestine should be short-circuited by means of Senn's plates, the proximal portion being at the same time relieved of much of its contents. If the condition of the patient were such as to permit of further operative interference, and provided the adhesion of the intestine to the neck of the sac and its vicinity were not too extensive, the damaged loop should be resected at the same time, otherwise it should only be incised and freely drained. 2. That, as a very large proportion of cases of strangulated hernia died from obstruction after herniotomy, owing to the strangulated loop not recovering itself sufficiently to allow of the passage of the contents of the bowel through it, in any case in which the condition of the strangulated bowel aroused suspicion in the mind of the operator as to the possibility of its not recovering, the abdomen should be opened in the middle line, and the condition of the damaged intestine, as to its transmissibility, fully explored. That if there were any doubt about it the intestine should be short-circuited; and if the condition of the damaged loop were such as to suggest ulceration and subsequent perforation, it should be excised also. He considered the present mortality after herniotomy a disgrace to the surgery of the present day, and only to be obviated by more efficient and thorough treatment than that at present adopted.—Mr. JESSETT said that it appeared to him that the second case was seen too late, when the chance of successful operation was remote. It was a matter for regret that a larger portion of intestine was not removed. He had operated successfully on two cases—one of communication of the small intestine with the roof of the vagina, and one of intestinal obstruction. In a third case of ulceration of intestine following the pressure of an ovarian cyst, a fatal result ensued twenty minutes after the completion of the

operation. He thought that when these cases were seen very late, the stomach should be first washed out and the operation postponed for a few hours until the patient was revived by brandy and nutrient enemata. He referred to the difficulty in approximating the intestine in cases of obstruction where the proximal gut was much dilated and the distal very contracted.—Dr. MOROTTI showed a specimen of the intestine of an animal which had been operated on according to a method described by Dr. Halsted of the Johns Hopkins Hospital, Baltimore. He held that for simplicity and rapidity of performance, combined with safety, it had no rival. He had performed different operations for intestinal anastomosis ten times, and in each case the animal had made a good recovery.—Mr. LOCKWOOD said that at St. Bartholomew's Hospital the taxis was always tried before a strangulated hernia was operated on, and the mortality in the total number of cases was 25 per cent; but the mortality in the cases in which the gut was gangrenous came nearer 90 than 80 per cent. The cause of death among these when analysed showed that the old treatment was unscientific, for the patient usually died unrelieved, or, if relieved, the gut had given way or gangrene had spread along it. Peritonitis had not been so frequent a cause of death as might have been imagined. Another great objection to the old method was that one could never be sure where the gut was opened. He asked what had been the experience of surgeons as to the other method, which Senn had proposed, that of lining the upper end of the gut with indiarubber and then intussuscepting it with four sutures; he had found it possible to do this on the cadaver in under ten minutes. Whatever operation were done, he preferred to do it through the original wound. It was a great question what would be the ultimate result in these cases of anastomosis; in at least one it was known that the opening made had closed up again.—Mr. H. H. CLUTTON spoke in favour of Mr. Lane's proposal, as he was convinced that the treatment of the gut by the old method was hopeless. He advocated a median abdominal incision, and attributed Mr. Lane's success to this procedure.—Mr. PARKIN had been over the statistics of Guy's Hospital for ten years, and found that there had been 272 operations for strangulated hernia with seventy-nine deaths. The mortality, taking all the cases, including those not operated on, was 22 per cent., while taking only those operated on it was 34 per cent. In twenty-two cases there was gangrene of the gut, and of these, twenty-one or 94 per cent. died: sixteen of peritonitis and five of exhaustion. In eleven of the cases an artificial anus had been formed, and these lived on the average seven days.—Mr. SYMONDS thought that the new operation described as Dr. Halsted's was very much like that which had been described before by Mr. Barker.—Mr. HARRISON CRIPPS had had two or three of these cases in his practice, and with one exception they had proved fatal. The case which recovered was that of an elderly woman, and he cut the gangrenous loop entirely away, and with a catheter passed into the proximal end let out quarts of feculent material. She died five or six weeks later from bedsores. He protested against the older methods being stigmatised as barbarous, and he thought that, if a patient were moribund, to do such a proceeding as Mr. Lane had described would destroy the last spark of life left. He held, on the contrary, that under these circumstances as little as possible should be done.—Mr. LANE, in reply, still held that the old treatment was barbarous. Mr. Cripps' only successful case died in a few weeks, probably because the gut had been opened very high up, and everyone admitted that the mortality under the old method was enormous. He held that in any case the bowel should be connected above and below, and, if the patient's strength allowed it, the gangrenous part should be cut away. The advantage of the median incision was that the bowel could be taken well out of the abdomen and thus risk of soiling the peritoneum was greatly diminished.

Mr. CHARTERS SYMONDS related two cases in which a sequestrum was removed from the neck of the femur without injury to the joint, and in which recovery with a perfect joint resulted in both. Both cases were children, one aged three and the other five. In both there was a large chronic abscess on the front and outer aspect of the thigh, without any joint pain. Both children could run about without pain, and with only a very slight limp. The movements of the joint in each case were only slightly impaired, and not more than could be attributed to the mechanical presence of the abscess. In the first case the presence and situation of the sequestrum were suspected, in the second it was searched for after the abscess was opened. In both a minute sinus was found leading through the front of the neck into a cavity in the neck. The channel was enlarged by gouging away a little bone from the outer side, and the sequestrum removed. In both the capsule was seen lifted up by the abscess; in the first, it was accidentally opened by a slip of the knife; in the second, it was intentionally pricked, and in both cases a few drops of clear fluid escaped. Both sequestra involved the epiphysial aspect of the neck, and in the first case was of considerable size. In the first case, operated on in 1887, the wound was stuffed and drained, and the child was not well for more than a year. In the second, operated on in May, 1889, according to the method introduced by Mr. Barker, the large abscess, after being scraped out, was sewn up and was followed by primary union. Both children were shown. The elder, a boy of seven, had a perfectly useful joint, possessing all the normal movements, and, moreover, there was no shortening and no irregular growth. The other, the first operated on, had a limb of the full length, but the joint was fixed. Mr. Symonds attributed the superiority of the result in the second case to the method of operating employed, and thought the ankylosis in the first case due either to the result of chronic synovitis extending from the cavity, or to the fixation caused by the splint.—Mr. BARKER said that the advantage of attacking the disease at this stage was that it could be dealt with by a comparatively small operation, whereas if it were left till later an extensive resection would probably be required. He referred to the case of a girl aged six whom he saw last September, with distinct symptoms of hip-disease. He had seen her again recently, and six weeks ago she had begun without leave to go about without the double Thomas's splint with which she had been provided. A large abscess now existed in front of the trochanter, and from the absence of pain when gently jarring the heel or knee, and the freedom of movement without grating in the joint, he was inclined to regard it as a case like that the author had described. He made an anterior incision, opened the abscess, and a probe entered the bone, the joint not being in the least degree involved. The trochanter was not swollen, nor was the limb shortened.—Mr. WATSON CHEYNE thought that these cases must be comparatively rare. So far as he had examined the pathology of the affection, in most cases the sequestrum extended to the surface of the bone near the epiphysial line, and the joint was then necessarily involved. He had in six cases removed sequestra without excision, and in one he had attacked it through the trochanter without opening the joint. He suspected that in the case the author had described the sequestra were in the substance of the neck rather than in the usual position.—Mr. SYMONDS, in reply, said that in the case of the boy nothing but a thin shell of bone remained, and the sequestrum contained no compact tissue. The larger sequestrum shown undoubtedly did involve the anterior surface of the neck. He thought that a good many of the chronic abscesses of the thigh were of this nature, the sinus leading to the bone being overlooked. It should be searched for at the extreme upper limit of the abscess.

Mr. STEPHEN PAGET described a successful case of Cerebral Abscess in which he had twice trephined. A boy aged twelve, after a discharge from the left ear, had for some weeks intense headache, with giddiness and strangeness of manner; there were also points of exquisite sensitiveness in the left temporal, malar, and occipital regions. A week after admission to the West London Hospital sudden vomiting supervened, then right facial paralysis, weakness of right arm, partial aphasia, and left optic neuritis. Mr. Paget trephined over the left fissure of Rolando, and let out an ounce of pus. Eleven days after, the abscess having refilled, he trephined again lower down, on a level with the lower opening. Two days later an offensive blood clot was found in the discharge, probably from the meningeal hæmorrhage which had occurred five days after the first trephining. The abscess cavity was now syringed through daily with perchloride. There was for some time after this a small hernia cerebri at the upper wound, but this was cured by elastic pressure. The wounds healed soundly, and the boy made a good recovery, save for some paralysis of the right side of the face. Mr. Paget called attention to the chief surgical features of the case, and to the curious sort of aphasia from which the boy had suffered, being unable to give the right names to objects, though he

recognised the names when he heard them. It was also to be observed that all through his illness, even at its height, the boy had a voracious appetite, eating and drinking enormous quantities of food. Mr. Paget quoted five published cases in which the same voracity for food and drink had occurred after severe injuries of the front part of the brain. He thanked Mr. Eccles, the house surgeon, for his devotion and skill in the management of the case.—Mr. BARKER congratulated the author on the result he had obtained, but hoped that he would indicate more exactly the situation of the abscess. He asked why the first trephine hole was made so high up. In a child the usual position to trephine was about an inch and a quarter above and behind the external auditory meatus.—Mr. DUNN referred to a case of old ear disease in which the mastoid had been trephined. The patient returned later with a discharge from the ear and a high temperature. An abscess was opened and the middle ear cleaned out. The temperature did not go down, and as paralysis of the arm supervened, he trephined over the fissure of Rolando, but with a negative result; he then trephined lower down and let out fœtid pus. The boy died ten days later of meningitis, and it was found that the abscess in the right hemisphere had opened posteriorly.—Mr. SYMONDS asked whether in cases of high temperature, accompanied by paralysis, it was wise to operate.—Mr. BRUCE CLARKE referred to a case in which the temperature was 104° F., and he cut down and found an abscess in the bone, and under the dura. The patient made an excellent recovery, but the brain was not involved.—Mr. PAGET, in reply, recurring to the voracious appetite in these cases, wondered if there were any centre for hunger and thirst which had been affected. The patient at the present time had deafness on the opposite side. The rise of temperature he attributed to an attack of pleurisy.

OBSTETRICAL SOCIETY OF LONDON.

AN adjourned meeting of this Society was held on May 6th, Dr. J. Watt Black, President, in the chair.

Tetany in Pregnancy.—Dr. DAKIN read a paper on this subject. The author gave a brief definition of tetany or tetanilla, and then narrated a case. In addition to the fact that it was an instance of a very rare disorder of pregnancy, the case had the peculiarity that the spasms never completely relaxed during the three days of the disease. The contractions were accompanied by, and were probably due to, very severe vomiting, and the two diseases combined led to a fatal issue, in which the tetany dealt the final blow by involving the muscles of respiration. The author then, from the few recorded instances of the disease during pregnancy, constructed a typical case, with which he compared the case detailed in the paper. The differential diagnosis between this disease and other spasmodic affections which might be confounded with it (tetanus, hysteria, spinal meningitis, uræmia, one form of epilepsy, and ergotism) was discussed, the treatment briefly referred to, and general conclusions drawn. A table of all accessible recorded cases was appended and references given to authors who had treated the subject generally and in special aspects.

Death following Injection of Acid Nitrate of Mercury.—Dr. JOHN PHILLIPS read a paper on this subject. The patient was a married multipara, aged twenty-five, when first under observation, her complaint being sterility and dysmenorrhœa. Three years later whilst separated from her husband she became pregnant, and with the object of ridding herself of the nine or ten weeks' conception about a tablespoonful of acid nitrate of mercury was injected into the vagina. The same evening vomiting set in and intense pain, for which morphia and cocaine were given. The face was pinched and of a markedly abdominal type. Temperature 102° F., and the pulse 112, wiry but irregular. The stools became frequent and blood-stained; the urine was scanty, and was passed involuntarily. The vagina was in a sloughy condition. The vaginal douche brought away some blood-stained flakes. The uterus was enlarged and the os soft and patient. Carbonate of ammonia was administered, but she sank and died. A post-mortem examination was made by Mr. Pepper. The bladder contained bloody urine, the blood evidently derived from the kidneys. The folds of the vaginal mucous membrane were covered by a hardened slough. The cervix was untouched, but there was some slight detachment of the decidual membrane. The uterus contained a ten-weeks' fœtus, with its membranes intact. The mucous membrane of the whole of the large intestine and the lower part of the small intestine was blackened and in a state of superficial slough. Peritonitis had commenced. The mucous membrane of the stomach was healthy. Dr. Phillips remarked that the peritonitis was due probably to absorption from the sloughy mucous membrane of the vagina. He pointed out that there was no fetor of breath, no sponginess of gums, and no enlargement of the cervical glands.—Dr. BOXALL thought it hardly fair to say in the present case that no wound existed, as an eschar was produced. In mercurialism from vaginal douches the symptoms were generally abdominal pain, diarrhœa, and tenesmus, and only rarely salivation or spongy gums.

Sequel to a Case of Serous Perimetritis.—Mr. ALBAN DORAN read a paper on this subject. The first paper on this case was published in the twenty-first volume of the Obstetrical Transactions. The patient died in August, 1890, about three years after the exploratory incision. The girl grew tall, but became ill and weak and emaciated. Dr. Ilott of Bromley watched the case to its termination. She showed tubercular disease of chest as well as abdomen, pyrexia, cough, sweats, hectic. Tubercle was found in the abdomen and chest. Both ovaries were much enlarged and converted into cysts filled with dirty, yellow, pultaceous material. The Fallopian tubes were swollen into two oval fluctuating cysts. Mr. Targett had examined the specimens microscopically, and could find no bacilli. He thought the condition was due to chronic inflammatory disease of gonorrhœal origin. The girl, although unmarried, admitted coitus, and so there was a possibility of gonorrhœa. She never menstruated again after the operation. If she had had gonorrhœa it is possible that the parts were thereby prepared for the easy invasion of tubercle. The probability of primary tubercular disease of the tubes is far greater. There was a family history of tubercle. Reference was made to the writings of Pozzi, Kelterborn, and others. In all probability the disease began as tubercular salpingitis, which set up tubercular peritonitis. This was relieved by the abdominal incision. The patient finally succumbed to pulmonary phthisis. The dull yellow spongy tissue cut into at the operation was not found at the necropsy.—Dr. HORROCKS remarked that the case was of great interest, as it had been so well and so patiently followed to its termination. He did not think that when bacilli were not found in a specimen one could say that the case was not tuberculous.—Dr. GRIFFITH referred to cases recorded by Bernutz and Goupil in which pelvic inflammation was apparently connected with tubercular disease, and remarked on the apparent infrequency of this connexion in England.—Mr. DORAN replied.

The following specimens were shown.

Dr. WM. DUNCAN: (1) Extirpation of the Uterus for Cancer; (2) Broad Ligament Cyst.

Dr. GRIFFITH: Double Hydro-salpinx.

EPIDEMIOLOGICAL SOCIETY.

The Relation of Modification of Function of Micro-organism to the Virulence and Spread of Specific Infective Diseases.

A MEETING of this Society was held on April 15th, Joseph Ewart, M.D., President, in the chair.

Dr. SIMS WOODHEAD read a paper on the above subject. After referring to the relations between saprophytes and parasites indicated in the paper read by Dr. Louis Parkes at the meeting in February, he said that the modification of habit consequent on the acquired adaptation of a micro-organism to changed conditions of pabulum, temperature, access of air or of light, &c., exerted considerable influence on its biological and pathogenetic functions, and that aerobism or anaerobism depended greatly on the nature of the food supplied. The constituents of culture fluids were the several forms of albumen and gelatine, ammonia, sugar vegetable acids, &c., and the addition of glycerine had often a remarkable influence. Microbes long accustomed to one set of conditions might be unable to resist a sudden transition, but if the change were gradual might grow luxuriantly under the new conditions, though perhaps exhibiting great modifications of function, virulence, and so on. These facts lay at the foundation of all prophylactic inoculations, the

first of which, since the discovery of vaccination by Jenner, was the attenuation of the bacillus anthracis effected by Professor Greenfield in 1880, who cultivated it in the aqueous humour of the ox, and which was soon utilised by Toussaint for conferring on cattle immunity against this disease. Such enfeeblement might show itself in the production of weaker toxines, or, as in the case of the cholera bacillus, when cultivated anaerobically in lessened resistance to germicides, including the digestive secretions. The alteration of functions in the cholera group of bacilli was extremely complex and interesting, especially the intensification of their virulence by deprivation of oxygen, which was attended *pari passu* with increased susceptibility to germicidal agents. Dr. Woodhead discussed the bearing of these phenomena on Pettenkofer's theory of the influence of the ground water on the prevalence of cholera and enteric fever, on the greater infectiveness of the soiled clothing after the lapse of some days, as well as on the various degrees of persistency of the infection in different localities. Long before the dawn of bacteriology Sir J. Simpson had suggested the communicability of tetanus, which he compared to septicæmia. Nicolaier identified its bacillus in 1883, but the earlier experiments were unsatisfactory; and it was only within the last year that MM. Vaillard and Vincent, following up the work of Kitasato and others, had elucidated most of the phenomena of this disease. They had shown that the symptoms were due to the formation of a substance closely associated with a peptonising enzyme produced by the bacillus, only under certain conditions of anaerobism, pabulum, and temperature, and that the spores themselves were inert, though if injected along with certain organic substances, as lactic acid or the culture fluids of some other bacilli, tetanus followed within a few days. Any doubts that might be entertained as to the reality of these alleged modifications of pathogenetic functions must be dispelled by an appeal to the visible phenomena exhibited by the colour forming micro-organisms. Thus the bacillus pyocyaneus under normal conditions gave rise to a blue pigment and to a green fluorescence in the culture fluid; the addition of glycerine prevented the formation of pyocyanin, in peptone-gelatine the fluorescence was lost, and in the presence of glucose the appearance of both was checked. These phenomena of chromogenism, though more palpable, were not more real than the modifications of pathogenism effected by analogous means. The observations of Löffler, Roux, and Yersin on the diphtheritic and pseudo-diphtheritic bacilli seemed to throw light on the marked changes of type seen in the course of epidemics of that disease. It was probable that certain conditions and surroundings, among which might be the presence of some other bacilli and their products, were necessary to evolve the malignant out of the comparatively harmless, though morphologically indistinguishable, forms, and that these conditions might operate out of as well as in or on the living body. The power of emitting light possessed by some bacteria was evidently dependent rather on the presence of certain pabula than on that of oxygen; while, on the other hand, the influence of light on the colour-forming function of some bacteria and on the development of others was very striking, as was that of temperature, alike on their growth and on their functional activity, as seen in the transformation of the micrococcus prodigiosus from a pigment-forming organism into a lactic acid ferment. On several putrefactive and pathogenic bacteria light alone, wholly irrespective of the pabulum or of the supply of oxygen, exerted an injurious action. This was conspicuously seen in the case of the bacillus of enteric fever, which was killed by a few hours exposure to direct sunshine and grew but feebly in diffused daylight—these effects being produced, as the experiments of Janowski showed, by the chemical rays of the spectrum.—Dr. WILLOUGHBY expressed his conviction that the modification of the functions of micro-organisms affected by their surroundings, so ably treated by Dr. Woodhead, presented the only satisfactory and complete solution of the phenomena of epidemics of diphtheria, the progressive virulence of successive cases, and the concurrent prevalence of sore-throats of every degree of severity, which had long been the puzzle of clinicians and pathologists, as well as of those of the "recurrence and recrudescence" of the disease described some time since by Dr. Greswell. The photophobia, as he might call it, of the enteric bacillus went far to explain the general association of that disease with sewers and cesspools, and of diphtheria rather with surface deposits of filth, as shown by Soyka at Munich, and confirmed by common experience enteric fever being emphatically a thing of darkness. He would suggest that we might thus reconcile the frequency of outbreaks of enteric fever from *recent* specific contamination of reservoirs with the rare occurrence of such results from the use of rivers undoubtedly polluted in like manner as sources of the public water-supply of towns, thus contrasting strongly with cholera, otherwise so like in its etiology, by supposing that the bacilli perished rapidly through exposure to the light of day. He then gave a summary of the researches of MM. Vaillard and Vincent, alluded to by Dr. Woodhead, on tetanus, its bacillus and its toxine, one practical lesson from which was the necessity for the strictest asepsis in the treatment of all suspicious wounds—viz., those to which earth or dirt had gained access, since the spores, which alone were accidentally introduced, were incapable of germinating in the healthy tissues, requiring the presence of pus and unhealthy discharges for their development, and the production of tetanin, the immediate cause of the disease.—Mr. SHIRLEY MURPHY said that there were a few recorded instances of enteric fever consequent on river pollution, one of the clearest being that of the outbreak at Gloucester following one at Kidderminster, twenty miles higher up the Severn.—Dr. PRINGLE quoted a remarkable instance in a Scottish town where an outbreak followed the discharge of the excreta of a single case some little way *below* the intake, but under peculiar circumstances, such that the contaminated water was drawn back into the pumps, having been held back by a weir.

Dr. THRESH read a paper, illustrated by maps and tables, on the Distribution of Enteric Fever in the County of Essex.

HUNTERIAN SOCIETY.

A CLINICAL MEETING of this Society was held on April 8th, Dr. Stephen Mackenzie, President, in the chair.

Ringed Eruption.—Dr. GEORGE CARPENTER showed a boy aged sixteen months with an eruption on the buttocks and adjacent parts, composed of rings one to two inches in diameter, with raised striated edges, and of the colour of raw ham. The enclosed surfaces were quite healthy, and the rings nearly a quarter of an inch broad. He had snuffles and a rash on the buttocks at six weeks. The ringed rash was of about four months' duration, and had improved greatly under mercury. The trichophyton had been well searched for, but in vain. There were no other signs of syphilis.—Dr. COLCOTT FOX agreed in believing the eruption syphilitic. The resemblance to ringworm was great, but the broad margin with a fine retiform structure was unlike. Ringed syphilides were in rare cases met with both in the congenital and acquired disease.—The PRESIDENT differed as to the diagnosis. Failure to find the fungus was no proof of its absence. There were no confirmatory signs of syphilis, and he thought it probably a case of tinea circinata.

Cranio-tabes and Parrot's Nodes.—Dr. CARPENTER also showed two infants with congenital syphilis to illustrate cranial conditions. The first was a boy aged eleven months with snuffles since birth and an eruption at fourteen weeks. When seen six months ago there were enlarged liver and spleen and some thickening of the spermatic cords. Craniotabes affected not only the occipital but the parietal and squamo-temporal bones. This condition was, however, no longer demonstrable. The boy's sister, aged two years, was also shown. She had snuffles since birth, and was decidedly rachitic, with enlarged liver and spleen and cranio-tabes at the parietal bones. Parrot's nodes were well marked. Dr. Carpenter considered that both cranio-tabes and Parrot's nodes were usually syphilitic manifestations, although some authors class them under rickets; 74 per cent. of cases of cranio-tabes were syphilitic.

Fibrous Growths on the Hands.—Dr. FRED. J. SMITH showed a case of unusual growths on the hands in a young woman, also exhibited several months ago. The nodules were now more distinct and isolated, with less erythema around. He had excised one and found it consisted of fibrous tissue.—Dr. COLCOTT FOX regarded the case as very singular; a similar one was published by Dr. Bury of Manchester. He thought it an indolent inflammatory eruption which had become fibrous in course of time.—The PRESIDENT still inclined to the diagnosis of rheumatic nodules.

Congenital Heart Disease.—Dr. SMITH also exhibited a boy aged twelve years with marked cyanosis of face and lips, the latter nearly black, and finger-ends much clubbed. There was no bruit, and the particular defect of heart present, which was discussed by Drs. F. Hawkins, G. Carpenter, and Dundas Grant, and Mr. Tatham and the President, must remain uncertain.

Paralysis Agitans.—Dr. A. T. DAVIES showed a man aged forty-nine years, exhibited before the Society three years ago. The symptoms were then confined to the right arm and leg, and some doubt was raised as to the diagnosis. Within the last two years similar symptoms had developed on the left side, and the case now presented a typical appearance.

Multiple Lipomata.—Dr. A. H. ROBINSON brought forward a man aged thirty-three years with numerous small fatty growths scattered over the trunk and limbs of ten years' duration. His father had some similar tumours.

Cervical Tumour.—Dr. ROBINSON also showed a man aged seventy-one years with an old tumour close below the occiput, supposed to be a lipoma. There was an irritable condition of the upper fibres of the trapezius, amounting almost to spasmodic torticollis.

A meeting of this Society was held on Wednesday, April 22nd, Dr. Stephen Mackenzie, President, in the chair.

Graves' Disease.—Dr. A. T. DAVIES showed a patient aged twenty-six years who had been under his observation for three years and a half. She was originally frightened by burglars. Cough, palpitation, and prominent eyes came on gradually, with anæmia, and some fulness of thyroid. Von Graefe's sign was present. Pulse 140. General marked pigmentation of the skin then appeared, such as to suggest Addison's disease, and in illustration of this a portrait from St. Bartholomew's Hospital museum was now shown, labelled "Exophthalmic goitre, with Addison's disease." In course ot time the pigmentation had to a great extent faded, the eyes had become less prominent, the heart rate was now only 80, and there was very slight fulness of the thyroid gland. The disease had thus become quiescent.—Mr. DENTON CARDEW had found there was abnormal increase of pigment in 70 per cent. of cases of Graves' disease, occurring both in the axillæ and in parts liable to pressure, as by a garter. He had found vitiligo and alopecia areata also common. Until a lesion of the suprarenal bodies is proved post mortem, he would doubt the coexistence of Addison's disease in such cases.

Fixation of Thorax and Head.—Dr. APPLEFORD exhibited a man aged thirty-seven years, in whom stiffening of the chest, head, neck, and right arm had been coming on for two years. He had suffered from rheumatism often, not rheumatic fever. A brother died of phthisis, and he had had much cough himself, and had wasted. The thorax was rigid, respiration being diaphragmatic; the head could be turned only slightly to either side; the right arm could not be raised to a right angle with the trunk. Increased knee-jerks and clonus were present, but no spinal tenderness.—Mr. POLAND attributed the fixation to osteo-arthritic disease, and pointed out that there was marked creaking in various joints.—Dr. F. J. SMITH hesitated between rheumatoid arthritis and a local pachymeningitis of the cord.

Acute Necrosis.—Mr. A. H. TUBBY read a paper on the Pathology and Treatment of Acute Necrosis of Growing Bone. After some remarks on the structure of the epiphysial line and the neighbouring parts, he said that, in view of the mode of onset, of the concurrence of periostitis and endostitis, and of the early separation of the shaft, with necrosis of its whole thickness, some region other than the periosteum or the medulla must be the site of the earliest inflammation. This region he believed to be the vascular layer of young growing bone, the juxta-epiphysial junction. Inflammation commencing here spread upwards and downwards to the medulla, and outwards to the periosteum, being assisted by the peculiar disposition of the periosteum at the epiphysial line. The following three points were advanced: 1. The disease variously known by many synonyms, but for convenience here called "acute necrosis," is due to the irritation and suppuration occasioned in growing bone by the entrance and development of micro-organisms, the staphylococcus and streptococcus pyogenes aureus. 2. In cases of total death of the diaphysis the destructive process is most marked at the extremities, and further, there is a loss of tissue here, so that the dead shaft no longer fits accurately into the periosteal and epiphysial cap. This point was supported by record of cases, notably those of Mr. Macnamara. 3. If the origin of the disease as a juxta-epiphysitis be conceded, then the method of treatment should be more thorough and radical. Mere incision of the periosteum is not sufficient, but tunneling the bone near the end of the shaft is necessary, to give exit to the products of the inflamed medulla, and to relieve the tension in the juxta-epiphysial region. With particular reference to the relative liability of the periosteum, medulla, and growing bone to inflammation, Mr. Tubby gave an account of some experiments, in which pure cultures of the micro-organisms placed in contact with these structures gave rise to inflammatory and suppurative changes, first of all near the growing line, before the periosteum became at all affected.—In the discussion which followed, Mr. J. POLAND and Dr. F. C. TURNER referred to a different class of cases, in which necrosis followed specific fevers. Here the process was much less acute, was localised, and was probably due to thrombi in veins.

Migratory Pneumonia.—Mr. F. R. HUMPHREYS read notes of two cases of Pneumonia with complications, in which the congestive process affected one lobe after another in both lungs. The first case died on the fifteenth day with lung softening and heart failure; the second recovered after a long course, including some cerebral mischief.

Notices of Books.

Manual of Bacteriology. By EDGAR M. CROOKSHANK, M.B. Third Edition. London: H. K. Lewis. 1890.—The call for a third edition of Crookshank's "Manual of Bacteriology" in less than four years after the appearance of the second proves that this work has supplied a felt want in bacteriological literature. In bringing out a third edition Professor Crookshank has seized the opportunity of slightly enlarging the scope of his work, of correcting some errors that appear in the old edition, and of generally bringing it well up to date. He has added a short historical account (based apparently on that given by Löffler) of the germ theory of fermentation and disease, has taken up the subject of special fermentations, and has described all the recent modifications of staining and cultivation, especially those adopted by the German school of bacteriologists. The French bacteriologists and their methods are not so fully represented, so that the impression is encouraged that the author has received the greater part of his technical training in the German schools. The literature in this edition is much better arranged than in the previous volumes, as, in addition to classifying the works of writers under different headings, such as "methods," "morphology," "immunity," "bacteria associated with disease in man and animals," &c., the works under each heading are arranged in chronological order. This, however, would be more useful still had the author given an alphabetical index of authors' names. The index is brought up to 1886, after which time the amount of literature is something enormous, and Professor Crookshank has very wisely not attempted to increase the bulk of his book by adding such a mass of literature. As in previous editions, the book is well printed, and the illustrations are numerous.

Comment on fait Parler les Sourds-muets. Par L. GOGUILLOT, Professeur à l'Institution Nationale des Sourds-muets de Paris. Paris: G. Masson, Boulevard St. Germain. 1889.—In this book we find explained in full detail the oral process of educating deaf-mutes as carried out in the National Institution of Paris. A preface by Dr. Ladreit de la Charrière contains a short but instructive

account of the prevalence, causes, and socio-legal relations of the deaf-mute condition. Historical details and general information as to schools &c., with a chapter on the Physics of Sound and the Physiology of the Voice, introduce the reader to a more practical subject—the preparation of the vocal apparatus and the senses of sight and touch for the actual course of instruction. The total disuse of signs is wisely insisted on. The method of teaching the accurate use of sight and touch, and of training and observing the breathing power as here explained, clearly illustrates the author's belief in the essential value of tact in a teacher. In Part III., the means of evoking the voice, its faults, and their remedies, are discussed at length. Part IV. contains some of the most interesting chapters in the whole book—namely, those which treat of the elements of speech and the methods employed in teaching them. This section is illustrated by a series of excellent diagrams representing the impressions left by the tongue in the movements of articulation upon an artificial vulcanite palate coated with a preparation of chalk, the invention of Messrs. Oakley-Coles and Kingsley. With the help of these, the mechanism, faults, and linguistic variations of speech are fully considered. We may notice as particularly noteworthy the passages which deal with the sounds *ch*, *j*, *k*, and *gu*. Further useful hints will be found in the last chapter of this part, the whole of which is characterised by practical thoroughness. Later, in Part V., the grouping of simple sounds to form syllables is described. In this connexion we would specially notice the composite sounds of *ill* and *gn* and the mute final *e*, which have been treated with careful and scientific appreciation. The remarks on graphic equivalents of sounds, on orthography for deaf-mutes, on the grouping of words, punctuation, and accentuation, are also worth reading, and a well-written treatise, at once full in its theoretical and clear in its practical details, is fittingly closed by a concise but careful summary of its method. The English reader must of course make due allowance for the peculiarities of French pronunciation, but he cannot fail in any case to profit much by the perusal of this little work.

The pages of the April number of the *Veterinarian* are occupied by a few remarks on the "Recent Outbreak of Equine Influenza," by W. F. Barrett, M.R.C.V.S.; a number of reports on the "Action of Tuberculin, and its use in the Early Diagnosis of Bovine Tuberculosis," collected from different sources; a leading article devoted to the same subject; extracts from British and foreign journals; and reports of meetings of the Royal Agricultural Society of England, of the Royal College of Veterinary Surgeons, and of the various veterinary medical societies and associations. The most interesting reports are those of the discussions on Professor Walley's paper on "Penetrating Wounds in the Foot of the Horse," and on Mr. C. Stevenson's paper on "Endocarditis in the Pig," to which Mr. Arup makes a most interesting contribution. He gives a description of the various forms of swine fever met with in Denmark and in Germany, and points out some of the distinctive characteristics of the acute and chronic forms of *Rothlauf* and of *Schweinseuche*, mentioning the special pathological conditions and the bacteria associated with these diseases. The May number of the same journal, with the exception of the first six pages, is also made up entirely of reports of the Royal Agricultural Society and of the Veterinary Medical Associations. Mr. William Littlewood gives an interesting note that the temperature of camels in health is apparently about 37·5°C., ranging from 36·4° to 37·8°C. It is stated by the editor that the Compulsory Slaughter Act, allowing of post-mortem examination in the case of a large number of cattle, has revealed two very important facts: first, that many animals suffer from pleuro-pneumonia, even when there are no indications of the presence of this disease during life; and, second, that tubercle exists to a very much greater extent than had previously been suspected. Professor Walley's paper on the Recent Outbreak of Equine Influenza is one of the most interesting items in the number. The author looks upon this disease as a periodic epizoötic, and considers that the virus is received into the system most largely by inspiration, that rise of temperature and nerve depression are the most marked features; but that in addition there are local manifestations of the disease, such as conjunctival œdema, cellular œdema of the limbs, acute dropsy of the joint capsules, and inflammatory lesions of the respiratory organs, the feet, and the bowels; he gives a very full account of the clinical characters, complications, and treatment. Mr. R. Reid contributes a paper on a similar subject. From the reports of the meeting of the Royal College of Veterinary Surgeons it may be gathered that some of the discussions are of a pretty lively nature, and that veterinary surgeons, like other people, do not always see eye to eye where questions of education and examination are under discussion.

Journal of the Royal Agricultural Society of England. Vol. II. London: John Murray, Albemarle-street.—This part has a far wider interest than its title might indicate. The first article, "Jethro Tull: his Life, Times, and Teaching," by Earl Cathcart, though of special interest to the scientific farmer, also has much to commend it to those whose tasks are biographical. "Indian Agriculture in its Physical Aspects," by Professor Voelcker, is the result of careful observation and inquiry in the regions of which he treats. The paper on "Acidity in Milk," by Dr. F. T. Bond, is apparently the outcome of the offer of a prize by the Society for the ready determination of the degree of acidity in milk which plays such an important part in the processes concerned in cheese-making. Dr. Bond uses a neutraliser of caustic potash equal to one-eighth the strength of the normal oxalic solution. As an indicator he uses phenol phthallein; he finds that the results obtained are sufficiently accurate. By using, in addition to this, alazarin he is able to indicate not only the total acidity, but also the proportion of volatile acid, and, by subtracting one from the other, to determine the fixed acidity caused by lactic acid and the acid phosphates. Professor Crookshank contributes a well illustrated paper on the tubercle bacillus, its chemical products, and the action of tuberculin. Other articles on "Farm and Poultry," on "Technical Agriculture," on "Modern Bee-keeping," and a very interesting article on "Agriculture and the House of Russell" by the editor, make up a most readable general part of the volume. The official reports to the Society and meetings of the monthly council for February form the remainder of this part.

BRISTOL GENERAL HOSPITAL.—The special appeal made by Mr. Proctor on behalf of this institution is receiving a very satisfactory response. The amount already promised has reached between £19,000 and £20,000. This sum will enable the committee to relieve the hospital of debt, although it will be inadequate to free the future work of the institution from embarrassment.

GERMAN HOSPITAL, DALSTON.—Baron von Schröder (the treasurer) presided at the forty-sixth anniversary dinner of this institution, held on Monday at the Hôtel Métropole. On proposing the toast, "Prosperity to the German Hospital," the chairman earnestly appealed to the sympathy and liberality of the meeting, stating that the charity possessed no endowment. The past year's expenditure had exceeded the income, which was due to a large increase in the number of patients. Nearly £10,000 had been expended, and the receipts amounted to about £9000. Subscriptions were announced to upwards of £3500, including £200 from the Emperor of Germany, £50 from the Emperor of Austria, and £100 from the chairman.

THE LANCET.

[*LONDON: SATURDAY, MAY 16, 1891.*

OUR forecast of the general meeting of the Fellows and Members at the Royal College of Surgeons of England on Monday last was fully verified. The extraordinary course pursued by the Council in accepting the doomed scheme for the reconstitution of the University of London in the name of the Fellows and Members, and summoning them to consider it *after* instead of before its final acceptance, thinned the attendance of the Fellows and Members. By some this action was regarded, erroneously, as we think, as a studied insult; by others as a mischievous farce; whilst a large number even of those who were actually present were at a loss to understand the exact object of the meeting. The President's opening address made it perfectly clear that it was in accordance with a resolution passed at a general meeting some years ago that the Council had been making efforts to facilitate the acquisition of medical degrees by London medical students, and in this respect the President and Council were fully entitled to the recognition which was accorded to them by Mr. NELSON HARDY, whose blessing was not less unexpected than that of the son of BEOR. The address did not, however, offer any explanation or throw any light on the peculiar period selected for the general meeting, nor even explain clearly the precise end which the general meeting would serve; and, overpowered by the sense of its aimless character, Dr. DANFORD THOMAS felt compelled to appeal to the President to explain the purpose of the assemblage and to thank him in advance for the expected information. Throughout the proceedings the President and the Council seemed to feel themselves to be in a false position. The resolution which stood second on the agenda paper, and which was moved by Mr. HOLMES, to the effect that it was not desirable under present circumstances to increase the power and influence of the Council as was proposed under the scheme, was evidently distasteful to the President and Council, who are not only the actual possessors of power, but regard it as very improper for anyone to say or move that it is desirable that this autocracy should come to an end by the amendment of the constitution of the College. No motion could have been more pertinent to the object of the meeting as announced by the President himself—viz., to consider the relations of the College to the scheme—or more germane to the discussion of that scheme. The President, however, for a considerable time appeared to be dubious as to whether it was in order, although he ultimately agreed that it should be discussed if the meeting wished it. The usual result followed. The resolution was adopted by an overwhelming majority, and none of its few hesitating opponents had the courage to explain the reasons which led them to hold up their hands against it. The skilful fencing of Mr. HOLMES with the President was not the least amusing part of the afternoon's proceedings.

Through some private communications not under the cognisance of the officials connected with the Association of Fellows, the order of the resolutions on the agenda paper had been altered, and Mr. LAWSON TAIT opened the discussion by moving a resolution condemnatory of the exclusion of the Apothecaries' Society from the metropolitan conjoint scheme for granting medical qualifications. The majority in this instance was very narrow, the meeting being almost equally divided on a question which is not thoroughly understood. Some of those who have approved of the exclusion of the Apothecaries' Society, and even one of the speakers on Monday in favour of this course, have been under the mistaken belief that the Society would continue to grant its separate licence even if it were a participator in the Conjoint Examinations. Nothing can be more erroneous than this. The object of including the Apothecaries' Society is to extinguish it as a separate medical authority, and there is no other method by which this virtual extinction can be accomplished. The Society would probably be satisfied with a very humble *rôle*, and the evils which result from the present competition and the existence of two qualifying licensing bodies in London would be removed. The Apothecaries' Society was called into existence as a qualifying medical authority by the Colleges of Physicians and Surgeons in 1815; it was accepted as a participator in the conjoint scheme of 1870–1876, and obtained an Act of Parliament for the purpose of taking part in it. It is specially protected by the Act of 1886; and how it can be removed from its independent position, except by friendly absorption, it is beyond our power to conceive. According to its means and lights the Society has done its work well, and the last body in the world to deny its just claims and to treat it with disdain should be the Royal College of Physicians, which wilfully handed over the general practitioner to the Society of Apothecaries in 1815, abandoned its great position as the head of the medical profession, and devoted all its energies to the narrow end of jealously conserving the interests of a small body of consulting physicians. Its late repentance and entrance on a better and higher course of existence should render it all the more tolerant and tender towards a body which has done its best to promote the general and professional education of medical students, and whose examinations were conscientious and creditable when those of other licensing bodies were extremely lax and defective.

Fortunately, the narrow margin by which Mr. LAWSON TAIT'S resolution was carried did not affect the voting on the two other resolutions, which were mildly condemnatory of the proceedings and policy of the Council. Indeed, it could only have been by an entire abandonment of common sense, and a spirit of blind acquiescence in the course pursued by the majority of the Council, that the resolution proposed by Mr. RIVINGTON and seconded by Dr. DANFORD THOMAS—"That this meeting regrets that the Council of the College has not seen fit to place before the Fellows and Members the scheme for the reconstitution of the London University before formally accepting this scheme in the name of the College"—could have

been defeated. This resolution and that proposed by Mr. HOLMES were drafted by the Committee of the Fellows' Association in the knowledge that all discussion on the details of a scheme which had been accepted by the Council in the name of the Corporation, before being submitted to the Corporation for approval, would be entirely misplaced. The assertion of just, right, and reasonable principles of action and policy, and the continued iteration and reiteration of those principles, is the only course by which the reform of the constitution of the College can be secured. The Council as a body must feel sufficiently uncomfortable when they find that in general meeting after general meeting, whether the number present be large or small, their policy is condemned by overwhelming majorities, and reasonable opinions, calmly and temperately expressed, as they were at the general meeting on Monday, have weight and gain adherents even in the ranks of the Council itself. The main danger to the cause of progress is that those who have advocated and those who have rallied round the advocates of constitutional development may grow weary on the march when the goal is not yet in sight. It is a dreary and desert region which has to be traversed, and one after another, some by the hand of death, some by sheer exhaustion, drop out of the ranks. Even the leaders may sometimes be discouraged, for in a profession like that of medicine, where there are daily and urgent claims of duty and occupation and practice to be satisfied, it is not possible always to bring all into the field who are in sympathy with the movement. But we are greatly mistaken if those who have been in the van will be discouraged or fail when success lies within measurable reach, and satisfactory indications exist that there are younger men who will come to the front and take the lead when the older men have ceased from their labours.

ALTHOUGH the discussion on Mr. WATSON CHEYNE'S paper at the special meeting of the Medical and Chirurgical Society on the 7th inst. was extended beyond the usual time, we cannot say that the speakers added materially to our knowledge of this subject or threw much light upon the questions which gather round the proper estimation of the value of KOCH'S tuberculin. Mr. CHEYNE, like all other observers, is impressed with the desirability of securing the local benefits of the remedy with a minimum of constitutional disturbance, and he has sought for a means of obtaining this result. He believes that it is possible to procure general tolerance of the remedy long before local tolerance occurs, and he repeats the inoculations as rapidly as safety will allow, with a view of arriving at a condition in which further injections of tuberculin cause no general disturbance of the system, and yet produce a local reaction. He lays stress upon the frequency of the inoculation rather than upon its strength, and also upon the long continuance of the remedy. Mr. CHEYNE states that he has not found any difficulty in establishing this partial tolerance of tuberculin, but Dr. C. T. WILLIAMS spoke of his inability to obtain it in patients suffering from phthisis, and other observers have expressed their doubts on this point. It may be that the septic complications in so many cases of phthisis have interfered with the action of the remedy. At any rate, Mr. CHEYNE has established a claim to have his method well and carefully tried, especially by surgeons, and in cases where there is no septic complication. As to the effects of, or need for, a long continuance of the use of tuberculin, it is of course much too soon to speak, and only patient observation can clear up that matter. If it is found to be necessary to repeat the inoculations for many months, or even a year or two, after apparent cure of the local tubercular disease, this fact will afford an argument against the use of the drug. The drawbacks of such a remedy are too apparent to need comment here and now.

In one way it is a hopeful fact that it is a debateable question which is the best mode of administering the new remedy, for it is possible we have not yet found the way to obtain the best results from it. It is clear that the method recommended at first by KOCH has not satisfied the expectations his statements led us to entertain, and it may be that Mr. CHEYNE'S mode of using tuberculin, or even some further modification still, may ensure its good effects and minimise its ill results. This, however, is a matter to be worked out. On the supposed and alleged dangers of tuberculin Mr. CHEYNE had much to say. His own cases furnish no evidence in support of the view that this treatment involves a risk of the general dissemination of tubercular disease; and he thinks this risk is a very small one, even if it exists at all, and that it depends upon its causing the disintegration of a tubercular deposit involving a vessel wall. He holds that there is no evidence to show that the tubercle bacilli multiply more rapidly under KOCH'S treatment. On the other hand, he believes that the changes attending the local reaction may favour the local dissemination of tubercle, and this in more than one way. Thus a tubercular deposit may be opened into the synovial cavity, or the tubercle bacilli may float away from a primary centre in the abundant exudation of serum that attends the local inflammation set up by the remedy. As an example of this result a case of tubercular laryngitis was cited, in which, during the treatment, fresh ulceration on the epiglottis and also near the original ulcer appeared. It is in cases of phthisis, however, that this risk of local dissemination of the disease is greatest. But Mr. CHEYNE'S best point in reference to the dangers of the KOCH treatment was that in nearly all cases it is contraindicated by the complication of sepsis along with tubercle. He believes that tuberculin increases the symptoms produced by sepsis, and that the local reaction it excites must be regarded as attended with the effusion of a large amount of serum, which acts as pabulum for the septic organisms, and so promotes their life, while this inflammatory change weakens the resisting power of the tissues, and so favours the penetration of the septic organisms. It is clear that if septic cases of tubercle are to be excluded as unfit for this treatment, it will limit very materially its field of usefulness, and particularly in those forms of disease which usually come under the notice of the physician, such as pulmonary and renal tubercle. The actual results obtained can only be appreciated by those who have carefully watched the cases; but thus far in his experiments Mr. CHEYNE has found that the treatment usually produces some local improvement, perhaps from the arrest of the surrounding inflammation. The tubercular disease may

then remain at a standstill or undergo a slight and gradual improvement.

Coming now to the results obtained in the treatment of particular forms of tubercular disease, Mr. CHEYNE thinks it very rarely cures in lupus, and that its action is more beneficial upon isolated nodules than upon wider infiltrations. As a sequel to a careful scraping operation tuberculin will probably be of some use; but if relied upon as a sole treatment for lupus disappointment will ensue, either because it altogether fails to produce a true local recovery, or from the liability of the disease to recur in the same parts. On tubercular glands but slight effects have been observed. The diseased glands themselves do not appear to undergo any decided changes, but the periadenitis clears up, and this greatly facilitates any subsequent operation for removal of the glands. In diseases of bones and joints a probability of a cure from tuberculin alone, even if used quite early in the disease, is but small; and later on, if sepsis complicates the case, tuberculin should certainly not be employed. After an operation has been performed, however, it may be of use, especially to obtain the rapid and sound healing of a wound or sinus. In such a case the treatment should be employed for a long time.

It is only fair to point out that Mr. CHEYNE'S paper must be regarded only as an *interim* report on his cases. Sufficient time has not yet elapsed to allow him to speak confidently of the later results of the treatment; and, again, his total number of cases is too small to draw final conclusion from. Allowing for this, however, we are compelled to admit that experience has by no means verified the hopes which this remedy at first held out to the profession. The most we can now see our way to say of tuberculin is that it may prove a useful adjunct to the surgical treatment of tubercle in aseptic cases. How to best employ it, and how long the treatment is to be continued, are questions the answers to which are still in the womb of the future.

THE records of epidemics of influenza reach back to comparatively remote periods. Professor HIRSCH, in his invaluable work on Historical and Geographical Pathology, has given us a tabular statement of such epidemics extending over seven hundred years. With every allowance for incompleteness and inaccuracy of observation, it may still be allowed that so remarkable an affection, which exhibits the epidemic character to the fullest extent, has varied but little during the progress of the centuries, and that directly or indirectly it has contributed very largely to shorten the average duration of human life. In spite of its having been so often observed, it is unquestionable that the nature and origin of the disease still remain veiled in obscurity, whilst now, as of yore, the profession is still quite undecided as to the mode of its diffusion over the world. The fact is that its occurrence seems to have been independent of known meteorological and climatic conditions; for when all the authentic records are compared, it is found to have arisen under the most varied circumstances in these respects. As yet it has not been possible to formulate any "law" of its occurrence; and although to a certain extent this may be true of many other acute febrile disorders, the origin of which may hypothetically be relegated to some few common sources, it is impossible to explain on any evolutionary hypothesis the apparently capricious character of the morbid influence that has such striking features, both as to its mode of spread and as to the symptoms it produces and the morbid associations it possesses. Of the latter we have during the past two years had ample experience, and the clinical history of influenza has become familiar to every practitioner. In what follows we shall attempt to see whether any light as to its nature can be gained from the study of this aspect as distinct from that of its epidemiology.

The present outbreak may be regarded rather as a fresh manifestation of the pandemic of 1889-90 than as a totally new invasion; and it will be well to guard against the fallacies that beset the theory of a purely contagious mode of propagation in the case of a disease which seems to be in some unexplained manner linked with atmospheric influences. It is the old question of miasm *versus* contagion, and one rendered all the more difficult of solution by the complex conditions of modern civilisation and the vastly increased facilities for human intercourse. Regarding, however, its clinical manifestations and morbid associations, we have in influenza, in the first place, an acute febrile disorder which differs from other known acute specifics in the brevity (or, perhaps, even absence) of a stage of incubation, and in not affording protection from subsequent attacks. The duration of the fever is, in uncomplicated cases, limited to within three or four days; but there is a great tendency to relapse, and so marked a tendency to complications that it is not easy to separate these from the essential manifestations. Yet when we consider the multifarious nature of these complications, it seems more scientific to detach them from the elemental disturbance as not strictly belonging to it, but being remarkably prone to develop in its course. The vast majority of these manifestations are of an inflammatory nature. Predominant among them is respiratory catarrh and pneumonia, to the prevalence of which during epidemics of influenza so much of the heightened mortality is due. We shall allude presently more especially to its association with pneumonia, but we would point out that the term "epidemic catarrh" is not strictly conterminous with "influenza," and that it will conduce to clearness if we banish the notion that catarrh is an essential feature of the disease. The confusion has, we fear, become too deeply rooted to be easily dispelled, for it has been fostered by the popular phraseology adopted in reference to any severe form of coryza.

The catarrhal manifestations are not limited to the respiratory tract; they may appear from the outset as markedly in connexion with the gastro-intestinal mucous membrane, and such disorder may concur with the former or be independent of it. On the other hand, every practitioner must have seen cases in which neither of these kinds of catarrhal inflammation has occurred. Indeed, if we were to seek for one clinical feature which more than any other seems to form an essential part of influenza, we should find it in the nervous system. The characteristic pains—out of proportion to the pyrexial state—experienced in various parts of the body, the frequently marked nervous depression and

prostration, and the powerful impress so often left by the disease upon the nervous system, as illustrated in a variety of conditions, seem to show that the poison acts with especial proclivity thereon. And through the nervous system the organs of circulation may be seriously implicated. The late Dr. STRANGE of Worcester, in the graphic account of his first attack of angina pectoris (the affection which ended his life a few months later), which he gave at the Medical section of the Birmingham meeting last year, showed clearly that in him the influenza was the *fons et origo* of his fatal malady; and his inference that possibly a stronger dose of the poison might carry off multitudes of victims, and reproduce the features of the Black Death and other fatal epidemics of the Middle Ages, may have had some truth in it. We are persuaded that the fatality of influenza amongst the feeble and the aged is not solely to be ascribed to bronchitis and pneumonia, but quite as often to cardiac asthenia, to which the pulmonary congestion may sometimes itself be due. Finally, of those who recover from the attack itself, several are more or less affected in one way or another. For months they may experience a lassitude and lack of energy previously foreign to them, or in other cases the influenza may have formed the initial factor in disturbing the balance of health, and its victims become invalided and prone to ailments on the slightest provocation. As to the numberless conditions which are more directly related to an attack of influenza, we may simply note here the liability to inflammations of nerve centres and nerves, or of more obscure affections, involving perhaps the sensory organs; the liability to inflammations of the ear and eye, and the rarer occurrence of nephritis. Indeed, there are few organs of the body which may not become the seat of inflammatory lesions, either as direct complications or even indirect sequelæ, a singular exception perhaps being the endocardium and pericardium—singular, that is, because of the undoubted probability of the blood being the medium for the diffusion of the poison.

We consider, then, that influenza depends upon the entrance into the body of a specific poison, and that its place is with the acute specific disorders. But when we contrast its manifestations with those of others of this group we are struck with their greater variety and extent. Its relationship to croupous pneumonia (for although broncho-pneumonia is quite as frequent, there is no doubt that croupous pneumonia is a very common concomitant), and the growing evidence in support of the latter being of the nature of a specific fever, invite a comparison between the two affections. In acuteness of onset, in brevity of duration, and in the liability to inflammatory complications, the two affections fairly coincide, but with a far greater tendency to such complications, on the part of influenza than of pneumonia. Pneumonia affords no protection from a second attack; neither does influenza. Pneumonia, although never pandemic, is certainly more frequently epidemic than is usually admitted. And the commingling of the two affections during the prevalence of influenza epidemics is a fact which admits of but little explanation except in some hitherto unknown dependence on similar conditions We lay no stress on the results of bacteriological inquiry, which are too discordant to be of much avail in the argument, and we merely hazard the suggestion that there may be more in common between these two diseases than is ordinarily suspected.

THE meeting of the members of Convocation of the University of London this week was the largest in the history of the University, and the majority which rejected the scheme placed before the House by the Senate was a decisive one. Members to the number of 197 supported the motion "that the scheme be approved," whilst 461 voted against it. Lord HERSCHELL'S speech in its favour was purely apologetic, and he must have felt how little could be urged for the cumbrous scheme when he pressed its acceptance on the graduates, not on account of the principles embodied therein, if there were any, but seeing that it must have some good in it because it satisfied nobody. The Senate has not fully grasped the significance of the fact that the University of London has been allowed by its founders and supporters to become a free and open examining board for the empire; indeed, it has done its work in this direction most thoroughly and admirably, but it is too late now to endeavour to engraft on it teaching institutions. Such a course would hinder their development and injure its own peculiar functions. Centralisation of University teaching in arts, science, and medicine, even at Burlington-gardens, is out of joint with the times, and local centres of education, if not too numerous, must have their chance. "A fair field and no favour" is a wise policy in higher education as in other matters. The Lord President of the Council must be consulted on the formation of a new University, or on any serious change in an old one, and we need not yet fear such a multiplication of degree-giving universities as to unduly lower the prestige of degrees. Sir RICHARD QUAIN'S arguments about the matriculation examination principally told against the course he was endeavouring to persuade the House to agree to, and Dr. PYE-SMITH'S contention that the scheme would bring into harmonious working all the medical schools, and that it would make the medical degrees more accessible without lowering the standard, was not seriously received by his audience. It is somewhat surprising that the supporters of the scheme did not make a better case for it, and Mr. HUTTON'S witty description, "that it had an enormous number of ganglia and no cerebrum," so happily hit off its complex arrangements in standing committees and methods of graduation that its rejection was at once assured.

Two stages have now been passed. The report of the Royal Commission marks the end of the first stage. It asserted the necessity of the formation of a University intended to have, as to teaching, a proper metropolitan character, and stated that the existing University is not a *London* University in any practical sense. It also put on record the conclusions of the Royal Commissioners that the so-called "London medical grievance" not only existed, but that it demanded a remedy. "A man who can call himself a Doctor of Medicine possesses certain practical advantages over a man, however distinguished, who cannot." "The great majority of

London medical students, if they take a degree at all, take it elsewhere than in London. ..... It is injurious not to the men themselves only, but to the public." A reasonable time for the University of London to adapt itself to these conditions has been granted, and after two years (for the report is dated April 29th, 1889) the authorities have signally failed to reach this end. We look upon the vote of Tuesday as decisive, for although Sir JAMES PAGET said on Presentation day that the voting lists would be considered by the Senate, and it is now rumoured that a new scheme on the lines suggested by the Royal Commissioners is contemplated, we cannot believe that any further attempt will be made to transform the character of so important an institution. We have always held that the Senate was trying to perform an impossible task by undertaking the duties and functions of a Teaching University as well as its own special work, in which belief we had the support of the practical educationists on the Royal Commission; now it is time that all other bodies interested should put forth their proposals, and a path be cleared for them. This marks the end of the second stage. In any real Teaching University for the metropolis, we must have a degree for London medical students on fair and equitable terms, and we trust that this difficulty will be met fairly, and not in the half-hearted manner which had so much to do with the failure of the Senate's scheme.

Annotations.

"Ne quid nimis."

THE ASSOCIATION OF FELLOWS OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE first annual dinner of the Association of Fellows of the Royal College of Surgeons was held on Monday at the Criterion, Piccadilly-circus. Mr. Pollock, the President, occupied the chair. After the loyal toasts, the Chairman proposed, "Success to the Association of Fellows," coupling the toast with the name of Mr. Holmes, as representative of the Metropolitan Fellows, and with that of Mr. Lawson Tait as representative of the provincial Fellows. Mr. Holmes believed that the Association was gradually gaining ground, and would succeed in its objects if it followed the example of Abraham Lincoln, and kept pegging away; and Mr. Tait urged the importance of the Association formulating a definite policy, and using every effort to support those candidates for seats on the Council whose views were in harmony with their own. Mr. Pollock's health was proposed by Mr. Macnamara in highly eulogistic terms, and was very warmly received. The services of Mr. Dunn, who has recently succeeded Mr. H. W. Allingham as secretary, were duly acknowledged. The committee of the Association will meet shortly to take into consideration the course of action that should be adopted in view of the approaching election at the College.

THE DISPOSAL OF THE DEAD.

AT the instigation of Mr. William Holder, M.R.C.S., the Burials Committee of the Hull Corporation has been induced to petition the President of the Local Government Board to bring in a Bill to allow corporations, as burial authorities, to provide for the erection of crematoria for the better sanitary disposal of the bodies of such persons as may have expressed a desire to be so resolved to their ultimate elements. Corporations under the present Burials Act are unable thus to use their funds. Although, as a method of disposing of the dead, we give the preference over consumption by fire to the "earth-to-earth" system, as being apparently more in accord with the indications of nature, yet we cannot but congratulate Mr. Holder on the success of his appeal, and the corporation on its public-spirited action. Far better cremation than the senseless and injurious mode heretofore adopted of confining bodies within lead and oak, and thus retarding as long as possible a process which the demands of both health and expediency require to be consummated without let or hindrance.

THE INFLUENZA EPIDEMIC.

WHETHER in consequence of the exceptionally warm weather or for some other reason, it is noteworthy that the spread of the influenza in the metropolis this year has been by no means so rapid or extensive as in the early weeks of January, 1890. This is illustrated by the returns furnished from the various general hospitals, which are given below. Nevertheless, the epidemic is sufficiently marked to attract considerable attention, and it is certainly a remarkable fact that so many members of the Legislature should have been attacked, including Mr. Gladstone. His Royal Highness the Prince of Wales was prevented attending the drawing-room and levée this week owing to a mild attack of the disease. Lord George Hamilton, Sir John Lubbock, Mr. T. W. Russell, Sir F. Mappin, Dr. Tanner, and Mr. Gully are among the members of the House of Commons who have also been suffering from it. The large proportion of members of the House who have been thus prevented from performing their duties has given rise to doubts as to the condition of the House itself, and in reply to a question put to him on Tuesday Mr. Plunket said that it was intended to fumigate the building with sulphur. The deaths attributable to influenza this week comprise those of Mr. W. M. Barbour, M.P., Mr. H. A. Brassey, and Mr. W. G. T. Preston, high sheriff for Lancashire. The Registrar-General's mortality returns for the week ending May 9th show an increase of 433 deaths in London above the average number in the corresponding week of the last ten years. The deaths primarily attributed to influenza, which had been 10 and 37 in the preceding two weeks, rose to 148, or 21 in excess of the highest weekly number during the 1890 outbreak. The deaths from diseases of the respiratory organs were 584, or 240 in excess of the average; of them 230 were attributed to pneumonia and 302 to bronchitis. The death-rate for the metropolis during last week amounted to 24·0 per 1000, and the following very exceptional rates in certain towns may be noted:—

	Weeks ending April 25th.	May 2nd.	May 9th.
Bradford	25·6	32·0	40·0
Halifax	33·9	42·1	35·8
Huddersfield	24·3	25·3	37·7
Leeds	27·9	36·1	48·3
Manchester	29·8	35·1	43·6
Oldham	25·9	30·4	38·2
Preston	30·0	32·9	37·3
Sheffield	57·3	70·5	50·3

Sheffield heads the list, but the epidemic is now subsiding there, although the disease continues to spread with much virulence in other parts of Yorkshire, especially in the vicinity of Leeds, Bradford, and Skipton. In Chesterfield it has been very marked, and as severe in its effects as in the neighbouring town of Sheffield, the death-rate for the past fortnight being 63 per 1000. In Liverpool and other towns in Lancashire the cases are still very numerous, whilst in North Wales, and especially in Carnarvonshire, it is extremely prevalent. The type of the disease in the midlands an eastern counties does not

seem to be so severe as that in Yorkshire, and the same seems probably true of London itself. It is to be remembered, however, that fatalities are largely favoured by surrounding insanitary conditions, and by exposure or exhaustion.

The number of patients suffering from influenza who have been treated at the hospitals in London during the past week has steadily increased. At Charing-cross Hospital 120 patients were treated, at Westminster Hospital 118, at University College Hospital 100, at the London Hospital 364, at Guy's Hospital 90, at King's College Hospital 92, at Middlesex Hospital 130, at St. George's Hospital 24, at St. Thomas's Hospital 227, whilst at St. Bartholomew's Hospital the number has not exceeded 20 daily.

OXYGEN IN SUSPENDED ANIMATION.

OUR contemporary the *Nineteenth Century* has published, from the pen of Lieutenant-Colonel Elsdale, R.E., a paper on the Application of Oxygen Gas as a Remedy in a case of Suspended Animation induced by the Inhalation of Coal Gas. In the year 1884 it was reported to Colonel Elsdale at Chatham that a sapper engaged under his command, in emptying a war balloon inflated with coal gas, had been overpowered by the gas. The Colonel ran to the spot, and found that the man was lying under many folds of the half empty balloon quite insensible, having "been breathing an atmosphere of coal gas for an unknown time" before his position was discovered. The man was rescued from his position, and, the day being warm, "was placed where he got full benefit of a fresh breeze." "The man," says the Colonel, "was to all appearance dead." There was "no action of the heart that could be felt and no perceptible breathing." In this emergency Colonel Elsdale sent for a tube of compressed oxygen, placed the nozzle of the valve of the tube in the sapper's mouth, and gently turned on the valve "as little as he could manage." "That little, however, was quite enough to inflate every corner of the patient's lungs with oxygen in the briefest possible time." The effect was to cause the patient instantly to revive and clutch the nozzle of the valve convulsively with his teeth. Some difficulty now occurred in getting the man's mouth open and drawing away the tube, and, as the gas was still rushing out, the lungs would have given way from the pressure had it not been for the escape provided by the open corners of his mouth. To a layman a phenomenon of rallying from deep insensibility like that described is naturally strange, and, as the sapper made a good recovery, Colonel Elsdale may well be pardoned for the enthusiasm he displays in the record of his achievement. Unfortunately, layman like, he goes into too warm an ecstasy in his comments on the medical side of the question—assuming, in fact, that he has observed something which we of medicine have overlooked. In sober truth, he was observing one of those curious phenomena of reanimation from deep anæsthesia which are being seen, perhaps daily, in the administration of anæsthetics, if all the experience of such administration over the wide world could be day by day recorded. The sapper was anæsthetised by a comparatively insoluble and light gaseous compound, and the day was warm. He was not dead; his heart, although it could not be felt, was still beating at low tension—the tension of hibernation, catalepsy, syncope. There was still some circulation through the pulmonic circuit; the vitality of the muscles, which is always well sustained under coal-gas anæsthesia, was present. The conditions for the escape of the gas contained in the lungs were good so soon as the liberation of the body and its exposure to the warm open air was secured; and the very rapidity with which the recovery took place is proof that the suspension of the vitality altogether was very slight. The oxygen gas emptied the lungs of the coal gas, and, taking the place of the coal gas, the recovery was expedited; but it would in all possibility have followed spontaneously, and it would certainly have followed gentle efforts of artificial respiration. In the lower warm-blooded animals we have seen many times spontaneous recovery from apparent death after inhalation of coal gas, and by artificial respiration with warm air we have resuscitated from the narcotism of this gas eleven minutes after all the indications of life had ceased. To our practical minds, then, the phenomena recorded by Colonel Elsdale are not remarkable; neither are the phenomena of recovery, the struggling and the quick return to power, to which he refers. The fact on which he lingers, that the man was able to walk calmly to his barracks after he had regained consciousness, is precisely what would be expected, and is no more wonderful than the spectacle of a man walking out of the dentist's operating chair after a deep insensibility attended by convulsive struggles, induced by nitrous oxide gas. At the same time there are one or two hints afforded by the narrative which should not be thrown away. The livid appearance of the sapper suggests that he was suffering partly from suffocation as well as from coal gas, since coal gas, owing to the carbonic oxide which it contains, causes redness of the tissues and of the vessels of the skin rather than lividity; but the suggestion should not be lost for repeating some of the old and now almost forgotten experiments with the gases which make up coal gas in order to determine, more conclusively than has yet been determined, their anæsthetic value. Another question is revived—namely, whether the violent administration of oxygen or air into the lung in suspended animation is good or bad practice. In the case named, as the man's nostrils and mouth were open, there was no undue pressure on the pulmonary surface, and his lungs were rather flooded than compressed with oxygen. But if they had been compressed, what would have been the result? We know by experiment. We know that the lung tissue would have given way under the pressure, and that universal emphysema would have been a cause of inevitable death. While, therefore, we entirely coincide with the advice that it is useful to extend the practice which has for some time past been instituted, of keeping pure condensed oxygen in hospitals, ready for immediate use, we could not commend the practice of using the gas under pressure for purposes of reanimation until all the tests necessary for such an application have been reduced to rule and order. Even then we doubt if such remarkable results of resuscitation would ensue as have already been obtained by the action of gentle, efficient, and long-continued artificial respiration.

THE EXCLUSION OF WOMEN FROM COURT DURING TRIALS FOR CRIMINAL ASSAULTS.

MR. JUSTICE WRIGHT, the newly appointed judge, took a course during the recent assizes in Liverpool which has occasioned some comment. As junior judge, he sat in the Nisi Prius Court, but during a break in the civil business he relieved Justice Grantham, who presided in the Crown Court, by trying some prisoners charged with criminal assaults on females. In accordance with the usual custom, women and boys were excluded from the court by the police officials stationed at the door, and when this came to the knowledge of the judge he rebuked the officers, severely, and not only ordered the doors to be opened for females, but more than hinted that they might gather instructive information from the trials. He approved of the exclusion of boys. But on the following day Mr. Justice Grantham, dealing with precisely similar cases, ordered all females to leave the Court. The decision of the senior judge is certainly more in keeping with that of most learned

judges, nor is this exclusion of females limited to the cases in question. When the brothers Wainwright were tried at the Central Criminal Court for the murder of Harriet Lane, the late Lord Chief Justice Cockburn plainly intimated that he should expect females to retire when the medical witnesses were called, and when, in spite of this warning, several females remained, the High Sheriff went up to them and persuaded them to retire. In a more recent case, known as the Ince murder, where the evidence was of a peculiarly horrifying character, involving sexual details of a most disgusting character, all females—and it is needless to add children—were rigidly excluded, with the perfect approval of the presiding judge, the late Baron Huddleston. Of the propriety of such exclusion there can be no question, the only modification which perhaps might be justified being that each female witness should be accompanied by one female relative or friend, so as to be spared the trial of being the only female present. It is extremely unpleasant for medical witnesses to have to give evidence in such cases before a mixed audience of members of both sexes, and we must confess our surprise that Justice Wright should have inaugurated his accession to the judicial bench by giving so extraordinary a direction. It must be remembered that the proceedings in the inferior courts are modelled upon those in the superior, and it is well known that a magistrate can, and not unfrequently does, hear cases in his private room. Moreover, there are other cases tried at most assizes which can only be hinted at even in a medical paper, where it would simply be an outrage to admit women. Indeed it is to be lamented that they cannot be heard in private. It is not likely that Justice Wright's example will be followed by other judges; the rule, even if an unwritten one, is too wholesome to be abrogated. And there are many other cases tried where ladies are permitted to be present, and in which Justice Maule's scathing rebuke might be fittingly applied, "All respectable females have left the court long ago."

ETHERISATION IN CROUP.

DR. F. BETZ contributes an article to the current issue of *Memorabilien*, which, though founded on only one case where etherisation was tried as a treatment for croup, is yet of sufficient interest to merit notice. He commences by pointing out that in croup the tendency towards death is by no means commensurate always with the morbid condition of the larynx anatomically considered, the nervous system often playing a considerable *rôle*. The case he describes was that of a child thirteen months old, to whom he was called by another practitioner in order to assist in the performance of tracheotomy. The child was breathing with the greatest difficulty, expiration and inspiration being equally noisy; the hypochondriac regions were strongly drawn in at each inspiration, also the lower intercostal spaces anteriorly; the alæ nasi were working strongly, and the child kept clutching at its throat, where the larynx was very prominent, and at its ears, and twisting its head round as if there were both pain and a sense of obstruction. It would not drink or stay in bed, the face wore an anxious expression, and the head was retracted. No membrane could be detected in the throat, and there was no sound of air entering the lungs when auscultated from behind. On the left side percussion was dull from want of expansion of the lung. Altogether the case was apparently hopeless. Notwithstanding the dangerous character of tracheotomy in children so young, preparations were made for its performance, when the writer suggested that ether inhalations should first be tried. A mixture was ordered of three parts sulphuric ether, one part acetic ether, and one-tenth part menthol, of which three drops were given as an inhalation on a folded handkerchief every quarter of an hour. The idea was by means of the vapour of ether and menthol to act on the mucous membrane of the larynx, which, as is well known, lies somewhat higher than usual in croup, and thus to contract the bloodvessels, to lower the temperature of the part, to decrease the œdema, to lessen secretion, and to allay the irritation in the larynx by the production of some amount of local anæsthesia. In addition to these, Dr. Betz had the further object in view of inducing partial general anæsthesia so as to give the child rest, and to allay the spasmodic contractions of the muscles connected with respiration. In a couple of hours a decided change for the better had taken place, the child being quieter, and some air evidently entering the lungs. The inhalations were continued therefore, but at intervals of half an hour. Six hours later the respiration had become much less noisy, the contractions less, and the dyspnœa far less urgent, enabling the child to drink. The face had regained its proper colour, and the child was apparently pretty comfortable, so that there was no longer any need to think of tracheotomy. The regular administration of the inhalation was stopped, but another mixture of a somewhat similar character, containing three-tenths of a part of menthol, was ordered, in case of any recurrence of the alarming symptoms. Fortunately the subsequent progress was so uniform that no recourse to this was required. The object of increasing the menthol was to obtain greater refrigeration and to enable it to penetrate further into the air passages. The writer remarks that Trousseau used to prescribe chloroform inhalations in croup, but he is disposed to prefer his own mixture of ether and menthol. Whether such etherisation has any power to loosen false membranes further experiments must show; but when tracheotomy or intubation is for any reason inadmissible in undoubtedly membranous croup, this treatment may, he thinks, very fairly be tried. The inhalations ought not to be continuous, but intermittent, and the medical man should for the first hour or two administer them himself.

THE ADMINISTRATION OF QUININE TO CHILDREN.

THE difficulty of giving quinine to children, especially when it is desired to administer somewhat large quantities, has of course frequently been remarked. In order to obviate this it has been proposed by various physicians accustomed to practise among children to order external applications either in the form of ointments or lotions, with the view of getting the quinine absorbed by the skin, and several continental writers have reported that this system has given good results in their hands. The amount of quinine absorbed under these circumstances, however, was not known, contradictory views on the subject being entertained, whilst many of the best works on children's diseases omitted all mention of the external form of administration. Dr. Troitski recently undertook a long series of observations in the children's department of a poor-house with the object of ascertaining what was the best form of external application and how far absorption is possible under these circumstances. His experiments, which were conducted on healthy children, about fifty in number, are published in the current number of the *Vrach*. He made some trials with ointments of which the bases were vaseline, lard, or lanoline, but very soon discarded this form of application, as he found that in order to get any appreciable quantity of the drug absorbed it was necessary to spend a long time rubbing in the preparation, which was not only tedious to the operator but very fatiguing to the child. Contrary to what most of the writers on the subject have advised, the region of the body selected for the application was the back of the thorax. Solutions of quinine were then tried, with rather more

success, 1 part of the hydrochlorate of quinine being dissolved in 30 of rectified spirit, or in 20 of spirit and 10 of glycerine. Of this a teaspoonful or a teaspoonful and a half was rubbed in twice a day until the skin became quite dry, the precaution having been previously taken of washing the child well. The urine was examined both by the chlorine water and by the iodine tests, and observations made of the comparative results in the same children. The conclusion come to was that, though the drug is undoubtedly absorbed by the skin from such solutions as were used, the amount was so small and uncertain as to render it impossible to administer the dose that may be desired by the external method. The good effects that are said to have been produced in fever by the lotions Dr. Troitski would ascribe, mainly at least, to the refrigerating action of the spirit on the skin.

HEALTH OF THE PRINCE OF WALES.

WE understand that H.R.H. the Prince of Wales has been suffering for about ten days from a slight attack of influenza, which has naturally left him somewhat weak and exhausted. We are glad to be in a position to add that he is benefiting from the rest from public and other duties which he is now permitting himself.

THE BOARDING-OUT OF WORKHOUSE CHILDREN.

THE Lord Mayor could not have given the sanction of the Mansion House to a better cause than that of promoting public interest in the Association for Advancing the Boarding-out of Workhouse Children, by which they are extricated from pauperising associations and placed in family conditions, at a less cost than that of keeping them in workhouses or in pauper schools. It is lamentable to think that we are behind Scotland and our own colonies in such a matter. Only 4540 children out of 41,296 children—orphan, or deserted, or relieved apart from their parents—are so boarded out. Only 2¾ per cent. of the children so treated turn out badly. The Lord Mayor was supported by H.R.H. the Duchess of Albany, Viscount Cranbrook, the Earl of Meath, Lord Brassey, Lord Norton, the Hon. S. J. Way, Chief Justice of South Australia, and others. We wish the association every success.

THE NEW BABY FARMING METHOD.

WE take this opportunity of directing attention to a phase in the widespread system of baby trading, of which the case of Joseph and Annie Roodhouse, recently tried before the Recorder, furnishes a gigantic illustration. The method pursued by this exemplary couple must be familiar to many of our readers. It will be remembered that they were not mere farmers of infant life, but stood in the position of ordinary middlemen. The novelty of their practice in this respect indeed is due rather to the extent than to the character of their operations. The children received under pretext of adoption were soon conveniently lost sight of in a third home, but the clothes and payments for maintenance were somehow absorbed in the transfer. In this way the accused are said to have obtained at least thirty-five children, representing actual money receipts to the amount of £219, and £35 worth of jewellery, besides clothing. Advertisement as usual played a prominent part in each transaction, and it is to fraudulent representations made in this way that the prisoners owe their past success in crime and their conviction. The utter badness of their case may be judged from the absence of even an attempt at defence against the charge preferred against them. The nearest approach to resistance was a poor excuse in favour of the male prisoner, that he had failed in other efforts to gain an honest living. It is the old story that one must live by hook or crook, and the end, if successful, will justify the means. The fallacy of the argument, and its hard and selfish injustice, in this case permit of no defence. The additional fact that of the thirty-five children ten have died is in itself suggestive, and should materially qualify any movement of pity originated by an illogical effort at exculpation. As regards the prevention of the disgraceful traffic in its various forms, we may take some encouragement from the very evidence of its prevalence, for this bears testimony to the vigilance employed in its detection. We have suggested in THE LANCET of March 21st a method of organising such effort by instituting a system of registration, with inspection of attendant circumstances in each case where the public press is employed to assist in the transfer of young children. We take it that no pretence of liberty could well be alleged in opposition to such a scheme, which at least bids fair to check the growth of a rank and luxuriant iniquity.

BLACK VOMIT FEVER.

THE nature of black vomit fever, or *fiebre de borras*, is by no means well ascertained, and different writers do not agree altogether in their descriptions of the clinical history of the cases they have met with. Dr. Bellot, writing in 1859, stated that there was never albuminuria, and that all the individuals attacked were children under nine years of age. He did not consider the affection as identical with yellow fever. Dr. Reyes, writing in 1881, contested the belief that the fever in question was of a contagious origin, and adduced several facts in support of his view. He described nearly the same clinical history as Dr. Bellot, but did not deny the existence of albuminuria, though he said that it was always much less in amount than in yellow fever. Dr. Albuerne more recently has suggested that the *fiebre de borras* is a hæmorrhagic form of bilious malarial fever. Dr. F. Suarez Garro has just published in the *Crónica Médico-Quirurgica* of Havana nine cases, all occurring in members of the same family, most of them being children. In these cases there was a great deal of albuminuria, especially in the two which proved fatal. Dr. Garro believes that the affection is a modified form of yellow fever which occurs in creoles. He supports this view by referring to the sudden invasion and the similarity of the symptoms during the first period, the coexistence of persistent vomiting with pain in the epigastrium and in the back, also by the coffee-ground vomit, which of course is not pathognomonic of yellow fever, but is, nevertheless, highly characteristic of it. The albuminuria, which in some cases amounted to eight-tenths, is also, when taken together with the other symptoms, an important element in the case. Lastly, the two children who died presented perfectly clear signs of uræmia, just as it only too often appears in yellow fever. The Havana Society of Clinical Studies is anxious to obtain as much information on the subject of this disease as possible, and, as we have before mentioned,[1] has issued a series of questions, to which it invites replies before the end of September.

PRIVATE SLAUGHTER-HOUSES.

ACCORDING to the Vegetarian Federal Union extensive reform is called for in our present system of replenishing the meat market. They condemn strongly the existence of private slaughter-houses on the ground that in them, owing to the difficulty of efficient supervision, many cruelties are perpetrated on the animals killed, while from the same cause diseased meat readily passes into the hands of consumers. They have therefore presented to Parliament a

[1] THE LANCET, Sept. 27th, 1890, p. 703.

petition advocating the exclusive employment of public abattoirs which would be subject to regular inspection. Assertions by a society of this kind on such a subject will naturally be accepted with a modicum of reserve, but this fact does not disprove their substantial accuracy. The idea contained in the above proposal is not a new one. It is already embodied in all its details in the customs observed in this particular by the Jewish community. There is much to be said in its favour and little in opposition if a guarantee be also provided that meat once killed shall be removed forthwith to its intended place of sale. Little, if any, inconvenience need be incurred by butchers if the change proposed were carried out. On the contrary, there would be in their case a considerable saving of trouble. The question as to how far the statements made by the Union are capable of accurate proof can only be settled by an official inquiry, and this appears to be on every ground advisable. Without it the Legislature would hardly be justified in moving, and we can readily understand that, whatever its ultimate result, the public interest would be served by such investigation. It would be too much to regard the butcher's poleaxe as the wholly blameless instrument of humanity and of health.

HEALTH OF MR. GLADSTONE.

WE are glad to be able to state that the Right Hon. W. E. Gladstone is progressing favourably in all respects, with the exception that the temperature still remains somewhat higher than normal.

THE GENERAL MEDICAL COUNCIL.

THE General Medical Council is summoned to meet on Tuesday, May 26th, in accordance with the standing orders. One of the first duties of the Council will be to appoint a President in place of the late Mr. John Marshall.

THE SANITARY STATE OF BORSTALL.

FOR some time past the neighbourhood of the Borstall Convict Prison, Rochester, has been regarded as unsatisfactory, and various endeavours have been made to induce the local sanitary authority to deal with the matter. Apparently at the initiative of the War Office, definite complaint was a short time since made to the Local Government Board on the subject, and as the result a local inquiry was held. The Local Government Board have now informed the Corporation that they find the complaints to have been well founded, and they therefore call upon them to take the necessary remedial measures. This, doubtless, amounts to an order under Section 299 of the Public Health Act, 1875, disobedience of which is commonly followed by application for a *mandamus*.

THE GERMAN EXHIBITION.

THE German Exhibition, the opening of which took place on Saturday last, promises to be no less interesting and successful than its predecessors which were arranged by the same director, Mr. J. R. Whitley. The Lord Mayor performed the opening ceremony, which in itself was marked by an enthusiasm which bodes well for the success of the undertaking. In future issues we hope to be able to give a description of some of the recent improvements in those departments which come more immediately within our province. The grounds promise to be admirably laid out, and even a cursory glance will show how carefully every detail in which the comfort of the public is involved has been considered and attended to.

FOREIGN UNIVERSITY INTELLIGENCE.

Breslau.—The new surgical clinic has just been pronounced by the Professor of Surgery, Privy Councillor Mikulicz, to be the best arranged clinic of the kind in Germany.

Turin.—Dr. Secondi has qualified as *privat docent* in ophthalmology.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.

THE deaths of the following distinguished members of the medical profession abroad have been announced:—Dr. Othon Saunier, chief medical officer of the Greek Navy.—Dr. V. Dattilo, formerly Professor of Operative Surgery in Naples.—Dr. Hugo Tansig, one of the medical officers of the Prague General Hospital, of typhus fever, contracted by attendance on patients suffering from it.—Dr. Thatcher, Professor of Physiology in Yale.

AN important series of eight practical lessons on the Use of the Ophthalmoscope and on the Estimation of Refraction will be given by Dr. Hill Griffith in the post-graduate class at the Royal Eye Hospital, Manchester, on Wednesdays, at 4.30 P.M., commencing May 20th.

THREE lectures on the Physiology of the Vaso-motor System will be given at the Royal College of Surgeons during the present month, by Dr. J. R. Bradford (Arris and Gale Lecturer), on Monday, Wednesday, and Friday, May 25th, 27th, and 29th, at 5 P.M. each day.

AT the meeting of the London School Board on the 7th inst., the recommendation of the Salaries Committee that the minimum salary of their medical officer should be £400 per annum, and that it should increase by £50 a year until £600 was reached, was carried by 19 votes to 12.

THE Croonian Lectures will be delivered at the Examination Hall on June 2nd, 9th, 16th, and 23rd, by Dr. Burdon Sanderson, who will take for his subject, "The Progress of Discovery relating to the Origin and Nature of Infectious Diseases during the last twenty-five years."

DR. C. THEODORE WILLIAMS' period of office as physician to the Brompton Hospital for Consumption having expired, the Committee of Management have unanimously re-elected him for a further term of five years.

DR. THEODORE THOMSON, medical officer of health for Sheffield, has been appointed to an inspectorship in the Medical Department of the Local Government Board, rendered vacant by the death of Mr. Spear.

IN consequence of the rapid extension of leprosy in Russia, the Town Council of Riga has voted a sum of 60,000 roubles to establish a Hospital for Lepers, which is to be inaugurated in July.

THE DEVONSHIRE HOSPITAL, BUXTON.—Dr. Robertson presided at the annual meeting held at the hospital on the 2nd inst. The annual report stated that on April 30th, 1890, there were 151 patients in the hospital, and since May 1st, 1890, 2363 patients had been admitted, 2263 of which were discharged as improved. Of the 2514 received from May 1st, 1890, to April 30th, 1891, 517 suffered from heart complications and rheumatism. The cases of a rheumatic or gouty character were equal to six out of every seven in the hospital, which testified to the value of the Buxton mineral water in the relief of such cases. Six cases only of accident were received during the year, of whom two died. Two annual life subscribers had been recently received, and the total subscriptions exceeded those of the previous year.

THE UNIVERSITY OF LONDON.

CONVOCATION AND THE REVISED SCHEME.

AT a crowded meeting of Convocation of the London University, held on Tuesday evening, the Right Hon. Lord Herschell, B.A., moved that the Draft Supplemental Charter embodying the proposed scheme be approved. He said that whatever might be the merits or defects of the Charter which they had to consider that night, he could assert, without fear of contradiction, that it had been the result of as much patient and careful thought, of as much anxious desire to arrive at a just and sound conclusion, as had ever been bestowed on any similar document. It had been considered and reconsidered not only by the committee appointed by the Senate itself, but the committee had conferred again and again with all those whose interests were affected, or supposed to be affected, and they sought light from every quarter from which they thought it possible that it might come. They were assisted by a committee appointed by Convocation, with whom they conferred on several occasions; and therefore, without for a moment suggesting that the pains that had been bestowed upon it were a ground for its acceptance, it was at least entitled to respectful and careful consideration; and he could but express some regret that, before the views of the Senate had been really placed before the members of Convocation, an attempt should have been made to pledge members of Convocation beforehand to dissent from it on what would seem to him an *ex parte* view of the subject. He did not say this by way of blame. Those who took this course no doubt thought it a desirable course, but none the less he thought that on a matter so important as this, in which the future of the University was so vitally concerned, it would have been well that, before the members of Convocation pledged themselves to any particular view, they should at least have had an opportunity of fully hearing and considering both sides of the case. He appealed to some perhaps who had signed that document to listen, notwithstanding, with open mind to the arguments that would be used. Of course there was a widespread opposition to this scheme. He had only one consolation, and that was that its opponents were at least as much opposed to one another as they were to the scheme. To the adherents of the London Colleges it had been pointed out that they had good ground for being aggrieved that the provincial colleges should find any representation on the Senate; whilst, on the other hand, the provincial colleges were excited by the statement that they did not get representation enough, and that the large body of graduates who did not belong to the colleges, either provincial or London, had their interests to look to, because if the London or provincial colleges obtained too much representation they were in a worse position. These objections were of a kind which, if left to their own instincts, would devour one another, but they had been dexterously caged and united in an offensive alliance. Unless the antecedent history of the University was carefully considered, it would be impossible to form any just appreciation of the action of the Senate. In 1884 an association had been formed, including many eminent men and some very energetic men, who advocated the formation of a Teaching University for London. They were convinced that the non-existence of such a university was not creditable to this city. Various resolutions had been collected in the documents which had been circulated in connexion with this meeting. One of these, which appeared to have been overlooked as passed by Convocation on Feb. 24th, 1885, was in these terms: "The objects of the Association—that is, the Association for the Teaching University—would, if carried into effect by this University, add to its usefulness and importance." Before matters had merged into a more critical position, that was the view adopted by the Convocation of the University. A petition was then presented from King's College and University College praying for incorporation in a new University. The Royal Colleges petitioned that they should have a University power to confer degrees. Upon this a Royal Commission was appointed to guide the Government, who had to determine what course had to be taken in regard to these petitions. The main recommendation of the report of this Committee undoubtedly was that the aims of those who desire a Teaching University would be better effected, more in the interests of the public and education, by a modification of the constitution of the London University, which would enable the work to be done by and through it, than could be done by a competing university in London; and then those members of the Commission who had doubts as to the practicability of this plan expressed their objections, a summary of which is to be found in the 16th paragraph of the report. It appeared to him that this question of the creation of a new University in London which should be a teaching and examining University, and give its degrees alongside of this University, was the real *crux* of the whole problem with which they were concerned. They had not to consider the question as it might have come to be considered if no such proposal had been made, or if they were to make a *tabula rasa*, and sweep out of existence all existing institutions. They had to deal with things as they are. The founding of such a University was properly viewed in two aspects—its effect on their University and its effect on education generally. He regarded the latter as by far the more important question of the two. If there were any conflict between the public interests and those of the graduates, he admitted at once that any privileges that may have been enjoyed or acquired by members of their University must give way before the interests of education. He believed the creation of such a new University would be mischievous in its effects on the existing University, and nobody could question that it would be a disadvantage to have another university, which would be claimed to be the Teaching University of London. (A voice—"Why of London?") Because whatever you call it and however much you attempt to prevent its being connected with the name London, that is what it would be sure to be called. (Cries of "No, no.") Well, it was a matter of opinion, and the fact that there had recently been bitter complaints from the University of Dublin and Trinity College that their degrees were being confounded with the degrees of the Royal University of Ireland indicated that a similar thing was likely to happen in London. If the establishment of a new University in London would improve the education of London or the country they ought not to hesitate for a moment if the degree were twenty times confounded with that of the London University; but his belief was that the foundation of such a University would inevitably tend to lower the standard of degrees and of education, however much those who promoted it might really and truly desire the contrary. There was the danger of multiplying, and especially of creating, small universities; and although there might be some who could resist the attractions of competition, yet not see that considerable danger of competition, the effect would be to lower the standard of degrees and react upon the standard of education. If the teaching bodies were to be gathered up into small universities in that way, the tendency would be that this University would become a mere examining body, more detached than now from the teaching institutions of the country, and that would be extremely deleterious to the work and usefulness of the University. When the report of the Royal Commission was issued, it was found that the two Colleges, University and King's, were by no means satisfied with it. Surely no member of Convocation would have desired the Senate simply to have held its hands and sheltered itself behind the report of the Royal Commission. On the contrary, the Senate thought they ought to consider how the wishes of the two Colleges could be consulted. There was a difficulty with respect to the conduct of the intermediate examinations by the colleges. That difficulty was met by the appointment of joint examiners—by the Colleges and the University. Then, again, the provincial colleges objected to the proposals of the Royal Commission, which would have given exclusive representation on the Senate to the London Colleges; and deputations from the provincial colleges had come to protest against their exclusion. Accordingly, on Jan. 21st last year, Convocation passed a resolution expressing a sense of the injustice of the exclusion of provincial colleges. The Senate thought that by the proposed Royal Charter they had reconciled conflicting interests. They did not claim that it would create an ideal or perfect system; but they thought it was the best attainable, that it was a just and equitable solution. Opposition had come from many different quarters. But that was inevitable. The scheme was of necessity a com-

promise. It met the legitimate desire of the London Colleges, and would bring the examining and teaching elements into closer intercommunication. No doubt many objections might be raised. Some said the standing committees would deprive the Senate of all control; others contended that these committees would become the mere creatures of the Senate. Both objections could not be realised, and he thought the truth, as usual, would be between the two extremes. He did not believe either that the influence of Convocation on the Senate would be diminished. Upon the subject of the medical part of the scheme he thought it had been the subject of a good deal of misapprehension. He could not understand anyone entertaining a doubt that the most important part of the scheme would be of the highest value by bringing the great medical schools of London into close touch and connexion with the University of London, between which hitherto there had existed a pretty wide chasm. He was quite certain the closer connexion would be to the advantage of both University and schools. There had been ungrounded fears with regard to the examinations being left in the hands too much of the Colleges of Physicians and Surgeons. The scheme could not have been understood by those who so regard it. This part of the scheme only gave the power to begin with. It depends upon an agreement to be come to between the Senate and the colleges, and it cannot have any effect until the subject has been weighed thoroughly and the exact form of the agreement determined upon. And unless the Senate and the colleges come to see a practical and beneficial course, the Senate would not give it their sanction. If they could not trust the Senate to look after the interest of medical education, and if it was thought that they were likely to surrender the cause of medical education to the Royal Colleges or to anybody else, of course the Senate would have to submit to be distrusted. Would it not be an advantage if an arrangement could be come to by which the number of examinations could be diminished? For his part he did not think the multiplication of the examinations was not a great evil. If a joint examination could be arranged for qualifying a student, whilst the University should give a degree only to the most distinguished licentiates after further examination, he did not see how it would lower the degree. He thought the effect would be to raise the standard, because men would strive to pass as well as they could in the hope that they might obtain the degree as well. It was said that the scheme was complicated and would not work, but nothing but experience could determine that matter. Everything had been proved to be impossible in its time, and when he was told that a thing was impossible, he desired to wait and see. The matter was not in their hands to dictate what was to be done if the scheme was approved by the meeting. They were not masters of the situation, though he wished they were. The scheme might be materially modified when it came before the Lord President of the Council. If Convocation refused to pass the scheme, the problem would remain unsolved, and this University would undoubtedly have lost very much of its power. (Cries of "No, no.") If the "noes" only represented facts, he should rejoice at it. He was as much behind the scenes as anybody is likely to be, and he could guess what was likely to happen. If they voted against the scheme on the supposition that the matter would then be in their hands to frame a new one, they would be grievously disappointed. There was obviously no alternative scheme on which any considerable number were agreed. The time for conferences was past. A single university in London in close connexion with the teaching bodies enabled them better to fulfil their functions and to promote the cause of higher education in the metropolis. It would be none the less able to discharge its old functions in relation to the provincial colleges, and would even bring them into closer relationship with the University, and it would still be able to discharge the important work in relation to the non-collegiate students from all parts of the British Empire, possibly more efficiently on account of the change, than was done before. He saw, on the other hand, the possibility of a creation of another University, resulting in a diminution in the influence of this University, and mischievous effects upon the higher education of the country.

Sir RICHARD QUAIN seconded the proposal as a graduate of this University for fifty years, who had watched its progress and seen how the Senate had conducted the University through all its difficulties to its present position. With respect to medical degrees, those who were not in the profession could not realise the grievance which the medical students of London felt themselves to be sustaining by the present state of things. Hundreds of capable men were driven to seek in Scotland, at Newcastle, and elsewhere the medical degrees which they ought to have obtained in London. Men who wished to graduate in medicine in the University of London had to get through the *chevaux de frise* of a matriculation examination. There was no desire to diminish the excellence of the medical degrees of London, but it was desirable to bring the Senate into touch with the Colleges of Physicians and Surgeons and the other examining and educational bodies. The two Royal Colleges had accepted the draft scheme, and he warned them that if it was not accepted, steps might be taken under the Medical Act, 1858, to compel union between the University of London and other colleges. He hoped the scheme would be accepted as the most satisfactory settlement attainable under present conditions.

Mr. BOMPAS, Q.C., as an old member of Convocation, wished to give a few reasons why the House should refuse assent to the motion. The scheme had to be considered on its merits, and not on the merits of its mover and seconder. The scheme would endanger the higher education of the country. What had the Royal Commission—which consisted of six members, three of whom were lawyers, and therefore not practically acquainted with the working of a University, and three practical men—said? The three men who were practically acquainted with educational matters were Sir W. Thomson, Professor Sir Gabriel Stokes, and Mr. Welldon. These three had emphatically pronounced against any charter and against the possibility of combining the functions which the University had hitherto so admirably performed with those of a local London Teaching University. These three gentlemen had also said that any such University must be in one place, and that its degrees should be granted by the University solely upon its own examination. Lord Herschell's idea, in fact, of an Imperial degree-granting University for the Empire, with its system of London and provincial colleges, was a chimera. He was an M.A. of Cambridge, but that was no evidence that he knew more than a third or fourth-form boy in a school. He was also an M.A. of London, and that did show that he had some knowledge. An Oxford or Cambridge degree was evidence that a man had for some years been subjected to the humanising influence of contact with cultivated and refined minds by residence in the University. The University of London had discharged the function of granting a degree which was real evidence of knowledge. It had done much, too, to raise the standards of the older Universities. But the new scheme would give the country graduates who would not gain either the peculiar advantages of the older universities or the evidence hitherto afforded by the University of London of the possession of real knowledge. The scheme would divide responsibility, and all experience showed that divided responsibility meant failure. It was absurd to suppose that two bodies who were hostile or suspicious towards each other could unite to conduct examinations together satisfactorily. He would appeal to Convocation to reject the scheme, and thereby finally save their University. But if it was not accepted, the whole matter would be left to the arbitrament of alien bodies. Their desire was that there should be one university, and not two or three miserable bodies contending for the name—that there should not be a Dutch auction for degrees. With regard to the medical question, it was in the power of Convocation to do irreparable harm to the cause of medical education in London. He would ask the graduates who were not medical graduates not hastily to thwart the attainment by the medical profession of the end which they had been aiming at for the last twelve or fifteen years. Their desire was to bring into harmonious working all the medical schools, and, secondly, to make the medical degrees more accessible without lowering the standard. The standard need not be lowered if there were an economy of examinations, and no needless going over the same ground more than once. The University had, at all events, brought into joint action the two Colleges of Physicians and Surgeons, each of which was anxious not to lower, but to raise the medical standard.

Mr. R. H. HUTTON said the one point which was the real flaw was that the charter would give the degree-giving power to a body which did not believe in the present degree, and wished to establish a different and purely col-

legiate standard of degree. The new Senate would consist of people most of whom wanted an altogether new kind of degree. They were inventing a scheme which had an enormous number of ganglia and no cerebrum at all. It was of importance to retain the confidence of the non-collegiate candidates, and this the scheme would not do. It was a mere hybrid which would not maintain the reputation of the University.

Dr. SANSOM said the scheme was calculated to impart a delusive hope rather than to remedy any medical grievance. It had in it elements of exceedingly great inequality and injustice. It reminded him of the words of Virgil—Monstrum ingens informe cui lumen ademptum.

Mrs. SCHARLIEB, M.D., said that the women members of Convocation, and especially those in the medical profession, were unanimous in wishing to reject the scheme proposed. It satisfied but a very small minority of them.

Dr. W. J. COLLINS, on behalf of those who opposed the scheme, recalled almost the last words Lord Granville had addressed to them—first, that they should retain the Imperial character of the University, and secondly, that they should maintain the standard of the degree. He opposed the scheme because he firmly believed, and fully agreed with Lord Herschell, that the higher interests of education must be put before the interests of this University. These two points were frustrated by this scheme, and he hoped they would reject it.

Lord HERSCHELL having replied, a division was taken, and the scheme was rejected, 461 members voting against it, and 197 voting in its favour.

PRESENTATION DAY.

Although the increasing numbers of new graduates and of the recipients of honours at the University of London were evident from the well-filled benches of the large theatre, and the consequent curtailment of the space allotted to visitors, nevertheless the proceedings of Presentation Day (the 13th inst.) were briefer than usual. The ceremony had unfortunately been deprived by the prevailing epidemic of the presence of the newly appointed Chancellor of the University, the Earl of Derby, and also of that of the representative of the University in Parliament, Sir John Lubbock, who is usually called upon for a speech on this occasion. The Vice-Chancellor, Sir James Paget, performed the duty of conferring the degrees, and in the too brief speech with which he closed the proceedings spoke in graceful and befitting terms of the services rendered to the University by the late Chancellor, Earl Granville, whose presence on these occasions was always so welcome. For thirty-five years Earl Granville had presided over the Senate, and in that space of time the University had progressed so much that the number of candidates for matriculation had increased ninefold, and of graduates tenfold. Sir James Paget spoke of the admirable qualities of the late Chancellor and of the manner in which he devoted himself to the interests of the University, pointing out that to his efforts was largely due the admission of the graduates to a share in the government of the University, and ten years ago the admission of women to degrees. In expressing regret at the cause of Lord Derby's absence, Sir James Paget read a letter from the Chancellor intimating his intention to found a scholarship to perpetuate the memory of Earl Granville in the University. Sir James Paget excused himself from discussing the vote passed by Convocation on the previous day, since the Senate had yet had no opportunity of considering it, and he passed on to congratulate those who had gained honours and degrees, after, as he trusted, having obtained them by surmounting difficulties. For, as he said, that only is worth having which is secured with difficulty.

MEETING OF FELLOWS AND MEMBERS OF THE ROYAL COLLEGE OF SURGEONS.

A WELL-ATTENDED meeting of the Fellows and Members of the Royal College of Surgeons was held in the theatre of the College, Lincoln's-inn-fields, on Monday last, at 3 P.M., by invitation of the Council, to consider the University of London Scheme.

Mr. BRYANT, the President, on the part of the Council, greeted the Fellows and Members with all good feeling and with some hope that they would as a body support the Council in its prolonged efforts to help the rising generation of medical students to obtain a degree. He reminded the meeting that the action of the Council was in harmony with a resolution passed at a meeting of Fellows and Members of this College on March 24th, 1884: "That this meeting of the Fellows and Members of the Royal College of Surgeons of England begs most respectfully to recommend that the Council of the College do obtain a charter to enable the College to combine with the Royal College of Physicians of London, with a view to the amalgamation of the two Colleges into one great College of Medicine, to be endowed with authority to examine and grant licences to practise in all branches of medicine and surgery, and to confer on its licentiates the degrees and titles of Doctor of Medicine and Master of Surgery." He simply recorded the fact that application had been made to the Government in the usual way, and the powers asked for had been very definitely refused, but not before a Government Commission, called the University of London Commission, had been appointed by the Crown, under the presidency of Lord Selborne, and a thorough investigation of the whole question of degrees had been considered and some important conclusions reached. The conclusions were the following. The Commissioners were satisfied that a great demand existed for medical degrees attainable in London, and that it was right that the demand should be met, and that, whatever difficulties there might be in supplying the demand, "those difficulties might be more easily overcome if the ground were occupied by one University only, and not by two"; and lastly, that the constitution of the existing university might be adopted for that purpose. "On these lines, therefore," continued the President, "our College, in conjunction with the Royal College of Physicians, has been steadily working with the University of London to formulate and perfect the scheme which is now in your hands. We believe it to be entirely consistent with the views of the University of London Commission, and we ask you, therefore, carefully to consider it on its own merits; indeed it is for such a purpose, and such alone, that we have called you together. To tell you that this is the very best scheme which could be devised by the ingenuity of man would be absurd. To say that it has not some weak points in its constitution, would also be untrue. To believe that many before me conscientiously think that they could, in their own armchairs, sketch out a far better arrangement than the one now presented to you would not be very wild. But we submit that by the scheme before us the objects we had in view at starting will be satisfactorily attained, and our London students will be materially assisted to attain a high degree, and the standard of the examination of the two Colleges be raised and not lowered; whilst at the same time the influence of the teachers will be increased, and none of the interests of any of the institutions which have been brought under the scheme have been made to suffer materially if at all. By the scheme the two Royal Colleges simply help the University of London to give a degree. The formation of a second and rival University was a consideration which influenced the Council in their exertions; for there could be no question that should this scheme break down, or fail to satisfy the requirements of the Commissioners and the Government, a second University would be erected by the side of the older institution, when, as a result, a competition for giving degrees will of necessity arise, which must act in an injurious way, for we cannot fail to recognise the fact that whilst competition in teaching tends to improve all who are engaged in it, a competition in giving degrees can but act downwards, to the detriment of the profession, and consequently to the public interest. On the present occasion we ask you to consider the scheme more particularly in relation to our own College, to weigh its advantages and disadvantages with respect to the interest of the College and its members, and to give the scheme your approval, if you believe with us that by it the position of our College will be maintained, and the future aspirants will be helped towards the attainment of a degree which in itself will be a mark of honour and an indication of a liberal education.

Mr. LAWSON TAIT moved "That in the opinion of this meeting no scheme for amalgamation with the University of London for the granting of a medical qualification, no scheme for a conjoint examination with the College of Physicians for such or a similar purpose, can be satisfactory so long as the Society of Apothecaries is not included in such scheme." He said, while personally thanking

the Council very sincerely for the new policy of consulting the body corporate in a matter of this kind, he only regretted that the consultation had been deferred until the patient was *in articulo mortis*. He felt, whether his prognosis was correct or not, that he must regard the scheme from a totally different standpoint from the President, and that therefore the conclusions regarding it were diametrically opposite. How the scheme before the meeting was ever to grant a degree of M.D to anybody in London which was not obtainable now he failed to understand. His view was confirmed by an able article in *The Times*, which pointed out that "the University would not be a London university, it would not be a provincial university, it would not, like the present institution, be a mere examining University. It would be an attempt to combine all three, and it would do effectually the work of neither." Concerning the medical relations of the scheme, he pointed out that the Senate carefully explained that in the arrangement proposed no alteration is now made in the degree of M.D. If that were the case, and if students were merely to get a cheap M.B, and not to be allowed facilities to obtain the M.D, what on earth was the use of the scheme to anybody? Matters stood exactly where they were. He had followed very closely the changing development of this question of medical reform, and it seemed that the initial mistake was made at the very beginning, the evil results of which were growing daily, and that was the mistake of not including the Society of Apothecaries in the scheme. He had been informed that the exclusion of the Apothecaries' Company was not due to the action of the Royal College of Surgeons, but to that of the Royal College of Physicians. They could easily understand that line of action, as the College of Physicians was a sort of successor of the Apothecaries' Company. He described the history of the Company, and pointed out that at one time the diploma of that body was even superior in public estimation to the diploma from the College, and that even now certain Government appointments were open to those holding the diploma of the Company, which were not open to those holding only the diploma of the Royal College of Physicians. He quoted the section of the Medical Act of 1886, which empowered the Society of Apothecaries to grant a statutory diploma in Medicine, Surgery, and Midwifery, and read the diploma granted by the Company at the present time, which certifies the candidate, after deliberate and careful examination, to possess the knowledge and skill requisite for the efficient practice of medicine, surgery, and midwifery. He had been actively engaged in endeavouring to repress the practice of those who assumed titles to which they had no legal right, and after a good deal of trouble means had been devised for effecting this. But it was found that in this diploma the Licenciate of the Apothecaries' Company is entitled to call himself physician and surgeon, and they were not quite sure that he was not entitled to call himself "doctor." He said the exclusion of the Apothecaries' Society would act in the direction so clearly expressed by the President of "a competition downwards," which of all things they deprecated, and if they wished to prevent this they must stop the legitimate growth of the Apothecaries' Company. It had been said that exclusion from the scheme would kill the Apothecaries' Company; but it was difficult to kill a corporation in London that dated its Charter from the time of James I., and instead of killing the Company they were granting it a new lease of life, and making it more powerful than ever. If reform in the method of education, training, and qualification was aimed at, either in London or elsewhere, they would have to begin again, and include the Apothecaries' Company in whatever scheme might be devised.

Mr. JOSEPH SMITH seconded the motion, and wished to know what the result would be if the meeting did not confirm the scheme, and why the invitation to the meeting had not been circulated among the Members as well as the Fellows.

The PRESIDENT: Seeing that 15,000 men are Members of this College, it was a serious matter to circulate so many prospectuses. At the same time there was no difficulty in obtaining them. With reference to the first part of the question, the decision of the meeting would be referred back to the Council for their further consideration.

Surgeon-Major INCE opposed the motion, and said nothing surprised him more than to find one of the ablest provincial surgeons advocating the interests of a commercial company. He should have expected that he would have taken steps to elevate the profession, and not to degrade it to the standard of a trade.

Mr. NELSON HARDY, as the seconder of the original resolution, passed seven years ago, alluded to by the President, said he hoped that in the end they had produced some influence on the minds of the Council, and although, like all great bodies, they moved slowly, he thought they might be encouraged in the hope that some good would ultimately come from their efforts. He entirely objected to Mr. Lawson Tait's proposal. Notwithstanding the L.S.A. being a double qualification and being registrable under the Acts of 1886, it nevertheless was one which the best of its holders had not been content with in the past, and he ventured to prophesy they would not be content with it in the future. If they passed this resolution to-day they would certainly delay the matter for another seven years. Before it was finally decided he thought it would be advantageous to have an impartial opinion upon this matter. He hoped the motion would be negatived by a large majority.

Mr. LAWSON TAIT, in reply, maintained that the Apothecaries' Society was a qualifying body, and the more it was degraded by the Council the more it would qualify in a downward direction, and that therefore there was more need to include it in this scheme.

On the vote being taken, twenty-three members voted for the motion and twenty-one against it. As is evident from the numbers, many of those present abstained from voting.

Mr. WALTER RIVINGTON moved: "That this meeting regrets that the Council of the College has not seen fit to place before the Fellows and Members the scheme for the reconstitution of the London University before formally accepting this scheme in the name of the College." After relating the various steps by which the necessity for calling meetings of the Fellows and Members had been impressed upon the Council, he described what had occurred at a recent deputation of the Fellows' Association who were received on this question, and who had had an opportunity of discussing various points. They recommended that the Council should at least call the Fellows together to consider the scheme of the University of London before it was finally accepted, a proposal, however, which was not adopted by the Council. The reason was given by one of the chief speakers, who said that it was a very intricate question, and that few of the Council understood it at all. And since that was the condition of affairs on the Council, it would be useless to place a scheme of this kind before the Fellows and Members, who would be worse off as regards enlightenment than the Fellows themselves. It was a case of the blind leading the blind, and both might fall into the ditch. The scheme would not remedy the medical grievance, for the obstacle of the two preliminary examinations was left untouched. If 200 medical students were to go up to the matriculation examination, 100 of them would fail, and of these fifty would fail to pass the preliminary examination; but in the later examinations, on purely medical subjects, the percentage of failures would be very much less. It was too late to make any suggestions now for the improvement of the scheme. He thought the conduct of the Council had placed them in a most injurious position in the eyes of the public. The proper course would have been to call the Fellows and Members together and ask them to appoint a committee to make suggestions, and to confer with the Council in the name of the Fellows, and then they would have been quite sure that no effort would have been spared to solve this very difficult and intricate question. It was not a question which should excite any party feeling at all, and it would have been a graceful act on the part of the Council to consult the Fellows and Members while there was yet time to consider the scheme. The scheme resembled the island of Laputa, the people of which lived in the air, and had their attention called to what was going on in the earth by flappers. He himself held no other position except to act as a humble flapper. His motion commended itself to all whether they were for or against the scheme.

Mr. DANFORD THOMAS, in seconding, thought the Council had, by calling them together under such circumstances, hardly acted in a polite manner, and had placed them in a very anomalous position.

Dr. W. J. COLLINS, in supporting, said he had never at any former meeting of this kind presumed to address those present, but on this occasion he felt bound, both as a graduate of the London University and as a Fellow of the College, to express his regret that there had

not been any opportunity given of making effectual suggestions before the Council had accepted the scheme in the name of the College. The late Lord Granville, in one of his happiest moods, compared the London University, subsisting upon Government grants and threatened with a Royal Commission, to an old lady who was so blind that she could not see, so deaf that she could not hear, and so lame that she could not walk, but who still thanked God that she had two teeth, one exactly opposite to the other. He did not know to what special matter Lord Granville was alluding, but at any rate there was one advantage which the graduates of the University possessed over and above the Fellows of that College, and that was the opportunity of discussing resolutions before they were carried and of making amendments before final action had been taken. At present they were called together for an absolutely useless purpose, when the matter had been decided over their heads. If an opportunity had been given, some profitable suggestions might have been made. They had heard that there had not been claimed for the Council a monopoly of knowledge and wisdom with regard to this question, and that was a reason for giving the rest of the Fellows an opportunity of discussing it. He had every reason to expect the vote of Convocation would not be favourable to the scheme. He did not know who had asked for it. It was utterly destructive of higher education, and would tend to destroy the unity and value of the past degrees of the University of London. Lord Justice Fry, in his letter to the newspapers, said that if the University were to go wrong to-morrow—which means if it did not agree with him—it would be a veritable Esau, and find no room for repentance. It was dangerous to indulge in Old Testament analogies; but if it was desired to find an analogue which would represent the action of the Senate in tampering with past degrees, he would say that they resembled Potiphar's wife, by endeavouring to rob them of their only decent garment.

Mr. GEORGE BROWN and Dr. ROBERT BARNES having addressed the meeting, the resolution was carried by a large majority.

Mr. TIMOTHY HOLMES moved: "That no increase of the power or influence of the Council of the College over medical education and examination is desirable under present circumstances." He recapitulated the circumstances which rendered it undesirable that the Council should have any larger influence upon medical examination and education which they sought to have through this scheme, and he trusted that if the Members of the College thought with him they would vote to that effect. The late history of medical education had been rather that of a curriculum in which fresh obstacles were continually being placed in the way of learners. That was a state of things which ought to be put a stop to, and if the Council consulted the Fellows and Members of their College before devising fresh regulations in this very important matter it would be put a stop to.

Mr. CABLE having seconded the motion, thirty voted for and six against it.

Mr. TIMOTHY HOLMES moved, and Mr. JOSEPH SMITH seconded, a vote of thanks to the President, which was cordially agreed to.

THE ROYAL SOCIETY.

PROFESSOR CROOKES' RESEARCHES.

THE *soirées* held from time to time by the Royal Society always prove of interest from the fact that the exhibits are generally illustrative of the more recent advances that have been made in the various departments of science. In view of the possible importance that the future application of any new discovery may have in its relation to the arts &c., the principal exhibits at least may be accredited as worthy of more than mere passing notice. Although at the *soirée* held at Burlington House on the 6th inst. the number of exhibits was smaller than on previous occasions, they were no less interesting in character; and it was scarcely surprising to find that electrical science has of late proved the more attractive field of investigation. Electricity and high vacua, radiant matter spectroscopy, and the genesis of the elements are subjects which have been, and probably will ever be, associated with the name of the distinguished physicist, Professor Crookes. On the present occasion he showed the remarkably brilliant phosphorescent display exhibited by the diamond; the colours varying, it was explained, according to the origin of the gems. Thus under the influence of the induction spark in high vacua, Cape diamonds are seen in the glass vacuum tubes to phosphoresce blue; Brazilian diamonds phosphoresce red, orange, blue, and yellow; and Australian diamonds yellow, blue, and green. The ruby phosphoresces of a strikingly brilliant red colour, but the most brilliantly phosphorescent body yet met with is sulphide of zinc, the hexagonal blende of Sidot. The specimen shown by Professor Crookes gave splendid effects. In the stream of electrified molecules it begins to phosphoresce at an exhaustion of several inches below a vacuum. At first only a green glow can be seen; but as the exhaustion gets better, a blue phosphorescence appears on the edges. On passing the current at a high exhaustion, the green and blue are about equal in brightness; but the blue glow vanishes immediately the current stops, while the green glow lasts for an hour or more. Apparatus was also exhibited showing how the phenomena of radiant matter, such as the projection of molecular shadows, mechanical energy, production of heat and phosphorescence, can be produced in tubes without inside electrodes; also experiments were shown illustrating that the resistance of vacuum tubes is dependent on the material surrounding the poles. In demonstrating this a double vacuum tube was shown, one side containing carbon and the other yttria. The fact of whether the vacuum tube contains yttria or carbon is found to make a difference of 21,160 volts in the electro-motive force required to cause a discharge between the terminals. But of still greater interest, perhaps, was the apparatus showing the return of exhausted molecules after having been shot off from the negative pole. The free path of the molecules—that is, the distance they traverse before colliding with others, as enunciated in the kinetic theory of gases, which assumes that collision of molecules in every direction is constantly taking place—must needs be longer in a space approaching vacuity, and they are consequently freer to move. In this condition, and under the influence of the induction spark, they are made to pass through a small hole in a glass diaphragm, and to actually turn a mill by their impact, and in returning, passing through another hole, the molecules are seen to turn a second mill. This was the subject that formed the beautiful theme of Professor Crookes' intensely interesting address delivered early this year before the Institution of Electrical Engineers. "Electricity *in transitu* from Vacuum to Plenum" was the curious title. The genesis of the elements was illustrated by the well-known model of the lemniscate curve, a subject upon which was founded Professor Crookes' remarkable address as President to the Chemical Society in 1888. Specimens of minerals containing the rare earths were also shown. Professor Crookes has, it is generally known, considerably expanded our modern ideas of the nature of the atoms, and he has found the induction spark of immense service in discriminating one element from another, and in indicating the presence of hitherto unknown elements in other bodies, in quantity far too minute to be recognisable by other means. So the discovery of the rarer elements and their behaviour under the influence of the induction spark in high vacua led him to the famous conception that there are several ranks existing in the elemental hierarchy, and that besides the well-defined groups of chemical elements there are underlying subgroups to which have been given the name of meta-elements.

A very interesting application of electricity was exhibited by Mr. Shelford Bidwell. It has been known for some time that the resistance of selenium to a current of electricity in the dark is diminished to one-half or less by the action of diffused daylight or by the light of a gas flame. Taking advantage of this curious fact, Mr. Bidwell has constructed a selenium lamplighter, which will light an incandescent lamp automatically when darkness comes on, and a selenium alarm bell for calling attention to the accidental extinction of a ship's light or railway signal-lamp. The electric current passing through the selenium cell is varied by the action of light sufficiently to make it work a delicate relay, by means of which a bell may be rung or an incandescent lamp turned on. A very beautiful series of the alkaloidal products, the so-called ptomaines, formed by bacteria from animal tissue, was shown by Dr. W. Hunter. There were the platinum salts of most of the series, and others were

seen to consist of crystals of a very definite character. Mr. J. Howard Mummery, M.R.C.S., showed specimens illustrating some points in the structure and development of dentine. They appeared to indicate that dentine is formed on a connective tissue foundation, calcification taking place in the meshes of a connective tissue stroma; the bundles of fibres are seen springing from the dentine substance with which they appear to be incorporated by calcification in or around them. The specimens showed these bundles of fibres in human dentine, in ivory, rodent dentine, and in the vaso-dentine of the hake. The much-speculated-upon subject of colour photography found illustration in the first colour effect obtained by M. Lippmann, who showed the photograph of the spectrum. The red and green were very marked, but the blue where the actinism is greatest was not so satisfactory. Professor Emerson Reynolds exhibited some beautiful specimens of compound ammonia-sulphur-urea preparations. One of them, tetra-thio-carbamide ammonium bromide $(H_6N_2CS)_4NBr$, is found to effect a very remarkable change in the photographic image. Thus in the development of the negative in a solution containing but $\frac{1}{100}$ gr. per ounce of the compound urea a positive is produced. A series of six small photographs were shown, in which the process of reversal was interrupted at different stages, so that the transition from a negative to positive can be traced. At the meeting of the Chemical Society last week, Professor Reynolds suggested the phenomenon to be due to sulphurisation of the more or less changed silver. Amongst other things exhibited of a less technical but very interesting character were the iron tools and utensils of the Roman period, recently found together in a pit in the Roman British city at Silchester, Hants, and bronze objects of the Roman period found in the same place. These were exhibited by the executive committee of the Silchester Excavation Fund, by permission of the Duke of Wellington. Professor Carrington Bolton showed specimens of musical sand, so called as on sudden pressure it yielded a musical sound. The specimens were from Arabia, the United States, and the Hawaian Islands. Remains of anomodont reptiles from the Trias of Karoo, Cape Colony, were exhibited by Professor H. G. Seeley. This splendid fossil has been very cleverly chiselled from the matrix by Mr. Richard Hull, by permission of the trustees of the British Museum. Lastly, during the evening Mr. Arthur W. Clayden entertained the company with a demonstration, by means of the electric lantern, of some very fine meteorological photographs. The photographs of clouds were taken by reflection from a mirror of black glass, placed in front of the camera, so that the plane of its surface made the polarising angle with the axis of the lens.

MEDICAL DEFENCE UNION.

AN adjourned meeting of the East Anglian and Midland Divisional Executive Committee of the Union was held at the council chamber of the urban sanitary authority, Alexandra-street, Cambridge, on Friday, May 8th. Dr. Barnes, divisional president; Mr. Beckett, president for Cambridgeshire; Dr. Grove, for Huntingdonshire; Mr. Balding, for Hertfordshire; and others were present.

On the motion of Dr. Barnes, who was unavoidably prevented presiding at the last meeting, Mr. Balding reoccupied the chair. The honorary secretary, Dr. Mead, read a copy of the letter which had been addressed to Mr. Joy, in accordance with the resolution at the last meeting, requesting information as to the grounds upon which Mr. Joy appeared to question the accuracy of certificates of death given in four fatal cases; also Mr. Joy's letter, in which he repudiated any intention to cast any reflection on the accuracy or *bona fides* of Mr. Fegen's action in cases undoubtedly of great difficulty and obscurity in their origin, and expressed his regret that any interpretation had been placed upon the wording of his report in any way hostile to Mr. Fegen, especially as at the time they were on very friendly terms. A letter was also read from the Central Council of the Union advising on the matter. The Chairman and other gentlemen expressed their satisfaction at Mr. Joy's letter, and also at the thorough retractation of any statements likely to be injurious to Mr. Fegen, published by the editor of the *Thetford Times*. Dr. Barnes proposed, and Dr. Grove seconded, the following resolution: "That this meeting is of opinion that the explanations are satisfactory, and they hope that medical officers of health will be careful so to word their reports as to avoid a meaning being attached to them prejudicial to their medical *confrères*; and they are of opinion it is not advisable that the names of sufferers from infectious diseases should be incorporated in a report intended for publication." This was carried unanimously.

Dr. Mead mentioned the case of a medical officer of health in Essex who was threatened with proceedings by an owner of property for having spoken of the insanitary condition of certain properties to intending occupiers, stating that in such cases, for the medical officer to secure complete immunity, it would be advisable for him to mention the facts in his report, and direct any inquirer to the paragraphs of such report relating to the properties rather than make any statement. In the case mentioned, the committee were of opinion, if any proceedings were taken against the medical officer, he should be defended by the Union. The committee unanimously resolved to thank Messrs. Barnes, Beckett, Balding, Beverly, and Mead for the great trouble and lengthened correspondence they had incurred in getting this matter amicably settled; also the Mayor of Cambridge and Dr. Anningson for the use of the Council Chamber. The honorary secretary, Dr. Mead, was requested to confer with Dr. Anningson, the honorary secretary of the district branch of the British Medical Association, and arrange for the holding of a meeting of the division during the June meeting at Cambridge. Dr. Barnes proposed, and Mr. Beckett seconded, that copies of these resolutions be forwarded to the medical journals.

In reference to the recent prosecution of Mr. S. E. L. Smith of Aston, Birmingham, which resulted in his being convicted, under Section 40 of the Medical Act, 1858, in a penalty of £20 for "unlawfully, wilfully, and falsely using the title of M.D.," and in two further penalties of £2 each for illegally assuming the titles of "physician" and "surgeon," Dr. Leslie Phillips writes to us as follows: "I trust you will again allow me to state that the Medical Defence Union had nothing whatever to do with the prosecution in any shape or form. The only connexion of the Union with the matter is that, the Council having from time to time received several complaints of the illegal use of medical titles as above by Mr. Smith, in consequence the solicitors of the Union were in October, 1890, instructed to write to him pointing out that the course he was pursuing 'might place him in an undesirable position.' Mr. Smith replied, 'I do not assume anything which I do not possess, or which I have not honourably and legally obtained.' The Council of the Union, having given this warning in consequence of the complaints they had received, decided to take no further steps in the matter either by prosecution or otherwise ..... It was not until some five months after the termination of the correspondence above referred to that the magisterial proceedings which resulted as above mentioned were taken, at the instance of someone else. I desire to state most explicitly that neither the Union, nor the Council, nor any officer of the Union had anything whatever to do with the prosecution, and that not a farthing of the funds of the Union, had been or will be applied, directly or indirectly, for the purposes of that prosecution. Several questions, however, of considerable interest to the profession have arisen out of the proceedings. Thus it has been contended that the penal provisions of Section 40 of the Medical Act, 1858, cannot be brought into operation against any duly registered medical practitioner. No doubt the section was primarily intended to meet the case of unregistered quacks, for whose suppression it is as a rule employed; and it is obvious that cases where a duly qualified and registered medical practitioner assumes medical titles which he does not possess must necessarily be of happily rare occurrence. I may say that the legal advisers of the Union are clearly of opinion that Section 40 is wide enough to include in its net all offenders in this respect, whether registered or unregistered. That this view is correct seems clear from the remarks of Baron Bramwell in 1860, in the well-known case of Ellis *v.* Kelly, 30 L. J. M. C. 35, where that learned judge said: 'It appears to me that, on the true construction of Section 40, if any person wilfully and falsely call himself a Doctor of Medicine he would be liable to a penalty, although he was in

reality a member of the College of Surgeons or of the Apothecaries' Company, and was so registered.' The only question, therefore, is what constitutes 'wilfully and falsely.' The same learned judge, in a later case, decided in 1872, Andrews *v.* Styrap, 26 L. T. N. S. 704, expressed his entire agreement with the following exposition of these words by Baron Martin in his judgment in the same case—viz., '*wilfully* (for he did it on purpose) and *falsely* (because he pretended thereby to be on an equal footing with any regularly bred physician or M.D.).' The *law*, therefore, is clear, and the rule of *practice* approved by some of the leading medical corporations is in accordance with it. By way of a single illustration, I may refer to the following resolution passed by a general meeting of the Royal College of Physicians of London, held on April 10th, 1876:—'No Fellow, Member, Extra Licentiate, or Licentiate of the College is authorised or entitled by virtue of any diploma or licence granted by the College to assume the title of doctor or to append to his name the title of Doctor of Medicine or the initial letters M.D., or any other letters indicating that he is a graduate in medicine of a university, unless he has obtained a degree in medicine from a university recognised by the College, and legally entitled to confer such degree.' There is no doubt that medical, like public, opinion changes rapidly, and of late years it has become common, in some parts of the country, at any rate, for medical men who would not for a moment think of using the title 'M.D.,' to style themselves 'Dr.' on their brass plates, visiting cards, &c., although they do not possess any—or any legally recognised—degree of M.D., or even M.B. It may be urged that nine persons out of ten address their medical man as 'Dr.,' but that of itself seems to afford no sufficient reason for the medical man so styling *himself*, if he be not legally entitled to do so. Speaking generally, it may be said that no diploma, and indeed nothing short of a registrable M.D degree, can confer the right to use the title of 'Dr.' Whether fresh legislation is necessary or desirable is a moot point on which considerable difference of professional opinion will no doubt be found to prevail."

CERTIFICATES OF STILLBIRTH.

ALLUSION was made some months ago to the want of printed forms of certificates of stillbirth for the use of those medical practitioners who, having large obstetric practices, or holding appointments to lying-in and maternity charities, are frequently called upon to give such certificates. It appears that for some time past books of forms, each containing twenty certificates with counterfoil for the use of the certifying practitioner, have been printed for the Registrar-General. These forms are in every way different from those for certificates of death, for which they cannot be mistaken. The outer cover is blue instead of light brown, the paper of the certificate is blue instead of white, while the shape more nearly approaches a square, being 3 in. shorter but 2½ in. wider. The wording, moreover, is of course totally different, and each form consists of two portions numbered respectively 1 and 2. The first is for use when the certifying medical practitioner was in attendance at the birth, and commences in the usual way, "I hereby certify that;" then follow the words "on the" and a blank space for the date of the birth. Another blank space follows for the name of the mother, and after the word "of" a third blank space for the residence. After this come the words "was delivered of a child, that I was in attendance at the birth of such child, and that such child was *not born alive*." The second portion of the form, which comes next, is for the use of any practitioner who has examined the body of the child, but who was not in attendance at the birth. This is worded as follows: "I have examined the body of a child of which I am informed, and believe that —— of —— was delivered on ——, 189–, and I hereby certify that such child was *not born alive*." Below this are the usual spaces for the date, signature, qualifications, and residence of the certifying practitioner; and at the foot this notice: "This certificate must be delivered to the superintendent of the cemetery, sexton, or other person having control over or burying in the burial ground to which the body of the stillborn child is taken for interment." On the back of each form is a notice to superintendents of cemeteries, burial board officers, sextons, and others, giving the whole of Section 18 of the Births and Deaths Registration Act, 1874. This provides that the officials in charge of burial grounds shall not permit the burial of any deceased child as if stillborn, or that of any stillborn child without (1) a written certificate that the child was stillborn, signed by a registered medical practitioner who was in attendance at the birth, or who has examined the body; (2) a declaration signed by a person qualified according to the statute to give information of a birth, stating that no registered medical practitioner was present at the birth, or that his certificate cannot be obtained, and that the child was not born alive; or (3), if there has been an inquest, an order of the coroner. Any person acting in contravention of these provisions is liable to a penalty of £10. Another notice on the outside cover informs registered practitioners that these forms are supplied gratis upon application to the registrar of births and deaths for the subdistrict in which they reside. But registrars cannot be expected to be very enthusiastic about a subject which does not concern them and from which they will not benefit either directly or indirectly. This probably explains why these certificates are so little known. They constitute a step in the right direction, and every registered practitioner who wishes to have them will know how they may be procured. There is one great omission which should be rectified in any future issues. No space is left for the sex of the child, a most important detail which ought not to have been overlooked. It would be interesting to know whether the certificates given by midwives, under which many bodies of infants are buried, come under the second subsection of Section 18, and constitute a declaration. Upon these and other details we shall no doubt have at least some light thrown by the returns recently called for by Dr. Cameron, M.P. The registration of stillbirths has for many years been urged by those most competent to judge of its necessity, and cannot be delayed much longer. The present Registrar-General, Sir Brydges P. Henniker, is said to be willing to listen to suggestions; and when his labours in connexion with the recent census are over, he would be well advised to take this matter vigorously in hand. It will not require any new department or any marked departmental changes, the present machinery amply sufficing for this purpose. A very large proportion of the total number of stillborn infants will be both delivered and certified to by registered practitioners; a large additional number will be medically certified after an external examination, though it will be well for young and inexperienced practitioners to observe great caution, otherwise they may certify that a child which has lived some time was not born alive. A third, and we fear a large proportion, will be delivered by midwives more or less competent, or by "handy women," and declared to. The difficulty hitherto urged has been as to the fœtal age which is to determine registration, but this need cause no difficulty at all. People are only too glad to bury the bodies of infants, whether stillborn or deceased, and whatever requires burial requires registration. As for the coroner's order, it must not be forgotten that many, if not most coroners, are chary of holding inquests on bodies which are palpably those of stillbirths, and for which inquests they may have no remuneration, and be surcharged with the expense.

VIRCHOW TESTIMONIAL FUND.

THE following additional subscriptions have been received:—

	£	s.	d.
A. C. E. Harris, F.R.C.S.	1	1	0
Frank Shearer, M.B., C.M.	1	1	0
James Ross, M.D., LL.D.	1	1	0
A. H. Young, M.D.	1	1	0
F. Chance, M.B., F.R.C.P.	2	2	0
C. E. Beevor, M.D.	1	1	0
Sir George Porter, M.D., LL.D.	2	2	0
Surgeon-Major David Wilkie, I.M.S.	1	1	0
George F. Crooke, M.D. ..	1	1	0
Sir Dyce Duckworth, M.D.	2	2	0
Samuel West, M.D.	1	1	0
P. H. Pye Smith, M.D. ..	2	2	0
John Chiene, M.D., F.R.C.S.E.	1	1	0
Byrom Bramwell, M.D. ..	1	1	0
Sir William Aitken, M.D., LL.D.	1	1	0
Sir Spencer Wells, Bart. ..	2	2	0
S. G. Shattock	1	1	0
Walter Bernard, F.R.C.P.	1	1	0
G. Sims Woodhead, M.D.	2	2	0
T. Pridgin Teale, F.R.C.S.	2	2	0
E. A. Shäfer, F.R.S. ..	1	1	0
Pathological Society of Manchester, per H. R. Hutton, Hon. Treasurer	2	2	0
Sir William Turner, F.R.S.	1	1	0
W. Mitchell Banks, M.D., F.R.C.S.	2	2	0
E. Markham Skerritt, M.D.	1	1	0

THE CASE OF WILLIAM KERR.

THE following correspondence has been forwarded to us for publication :—

41, Lowther-street, Carlisle, April 28th, 1891.

SIRS,—When on February 9th you declined to wait for a reply to your letter dated the 4th, I came to the conclusion that you did not desire to receive my answer. I have now had an opportunity of seeing the independent testimony you mention, and desire to deal with the parts of paragraph 6 of the memorandum to which you have objected. "That no tear was discovered before the removal of the womb and vagina" was an inference drawn from the wording of your own report, together with the fact that there was no evidence of bleeding, which, to my mind, there would have been had the tears been inflicted during life. The "marks" which showed "recent effusion of blood" I take to be submucous extravasations of blood. The tears are described as having been met with "on further examination," and not a word indicates that they had bled. Small effusions of blood are mentioned as occurring in the mucous membrane beyond the tear, but no mention of abrasion of the mucous membrane is found. Surely abrasions should have been met with. It is true that report speaks of smearing of blood over the genitals, and that the chemise was stained apparently with fæcal matter and blood, but I gather from your letter to THE LANCET that you recognise the absence of bleeding from the vagina, and explain it by saying that the woman died so quickly after the assault. The memorandum does not say that you removed the womb and vagina in any special way, and I refer you back to paragraph 6, as you will then see that "was" and "is" are two different words. In whatever way pelvic organs are removed, I take it that strain and liability to rupture would be an accompanying circumstance. These are the main considerations which induced me to believe that the statements and inferences complained of in the sixth paragraph were correct, but of course I accept the statement made by yourselves and Dr. Walcot, that you saw what appeared to be tears in the mucous membrane, and on further examination—i.e., after removal of the parts—your surmise proved to be correct, and the tears were discovered in the places you had indicated. That soft parts may show traces of laceration and ruptures in the course of post-mortem examinations is hardly open to doubt, whatever part of the body is concerned, and in making the suggestion that is found in the memorandum no imputation of carelessness was implied or even thought of, and I regret that I should have suggested anything which bore to you that meaning.

I am, Sirs, yours faithfully,
Drs. Barnes and Maclaren, Carlisle. H. A. LEDIARD.

Carlisle, May 6th, 1891.

SIR,—We are in receipt of your letter of the 28th ult., which has received our careful consideration. When we wrote to you on Feb. 9th it seemed to us that five days was sufficient time for the retractation of the allegations which we specified in our letter of Feb. 4th, and which we informed you were entirely unfounded. Having recently had the opportunity of perusing the independent evidence referred to by us in our first letter, you now forward what appears to us a retractation, and we of course accept both your statement that "in making the suggestion which is found in the memorandum no imputation of carelessness was implied or even thought of," and also your expression of regret that you should have suggested anything which bore to us that meaning. We are sorry, however, that in dealing with the statements in Paragraph 6 in the earlier portion of your letter we are unable to accept as correct either your facts or your inferences. Our effort was to make as thorough an investigation as possible, and to state all the facts and appearances that came under our notice, whether they told for or against Kerr; and we should have had pleasure in placing at your service, at any stage of your efforts on behalf of the convict, correct information on any point which seemed to you to need further elucidation.

As you seem to have forwarded copies of the memorandum to the press, and as a different interpretation has been put upon your words in leading articles, and by many of our friends, we intend to send this letter for publication, and if you wish it, and inform us of the wish before to-morrow night, we shall be glad to forward a copy of your letter also.—Yours faithfully, HENRY BARNES,
To Dr. Lediard. RODERICK MACLAREN.

41, Lowther-street, Carlisle, May 7th, 1891.

SIRS,—There can be no objection to the entire correspondence being published in the medical papers in full, and in the local papers in as full a manner as is consistent with public decency. You must not misunderstand me, however. At no time did I say, nor did I wish to imply, that there had been negligent or incapable conduct on your part. If any words would seem to bear that construction, I repudiate them. But I have not modified my belief that you were mistaken in the conclusions you arrived at; and in the interests of public justice I intend to adopt the suggestion made to me—i.e., to petition the Colleges of Physicians and Surgeons of England to consider the case of William Kerr.—I am, Sirs, yours faithfully, H. A. LEDIARD.
Drs. Barnes and Maclaren, Carlisle.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN twenty-eight of the largest English towns 6155 births and 5555 deaths were registered during the week ending May 9th. The annual rate of mortality in these towns, which had increased from 22·5 to 26·8 per 1000 in the preceding three weeks, further rose to 28·9 last week, which, with three exceptions, was higher than that recorded in any week since 1882. The rate was 24·0 in London and 32·9 in the twenty-seven provincial towns. During the first five weeks of the current quarter the death-rate in the twenty-eight towns averaged 25·1 per 1000, and exceeded by 3·7 the mean rate in the corresponding periods of the ten years 1881–90. The lowest rates in these towns last week were 18·0 in Bristol, 19·2 in Brighton, 19·2 in Bolton, and 23·3 in Sunderland; the highest rates were 40·0 in Bradford, 43·6 in Manchester, 48·3 in Leeds, and 59·3 in Sheffield. The very high rates in the last-mentioned towns were due to the severe epidemic of influenza. The deaths referred to the principal zymotic diseases, which had increased from 420 to 462 in the preceding three weeks, declined last week to 442; they included 189 from whooping-cough, 112 from measles, 43 from diarrhœa, 34 from "fever" (principally enteric), 32 from scarlet fever, 31 from diphtheria, and one from small-pox. These diseases caused the lowest death-rates in Brighton, Cardiff, Norwich, and Derby, and the highest in Huddersfield, Leicester, Manchester, and Portsmouth. The greatest mortality from measles occurred in Bradford, Preston, Bristol, Huddersfield, and Portsmouth; from scarlet fever in Bradford; from whooping-cough in Liverpool, Oldham, Plymouth, Leicester, and Manchester; and from "fever" in Leicester. The 31 deaths from diphtheria included 21 in London and 2 in Manchester. Small-pox caused one death in Liverpool, but not one in any of the other twenty-eight large towns; 33 small-pox patients were under treatment in the Metropolitan Asylum Hospitals, but not one in the Highgate Small-pox Hospital on Saturday last. The number of scarlet-fever patients in the Metropolitan Asylum Hospitals and in the London Fever Hospital at the end of the week was 911, and showed a slight further decline from recent weekly numbers; the patients admitted during the week were 79, against 85 and 100 in the preceding two weeks. The deaths referred to diseases of the respiratory organs in London, which had been 471 and 588 in the preceding two weeks, were 584 last week, and exceeded by 240 the corrected weekly average. The causes of 95, or 1·7 per cent., of the deaths in the twenty-eight towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Norwich, Plymouth, Wolverhampton, and in four other smaller towns; the largest proportions of uncertified deaths were recorded in Liverpool, Oldham, Sheffield, and Hull.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 22·1 and 23·1 per 1000 in the preceding two weeks, further rose to 23·9 during the week ending May 9th, but was 5·0 below the mean rate that prevailed during the same period in the twenty-eight large English towns. The rates in the eight Scotch towns ranged from 12·3 in Perth and 13·0 in Greenock to 29·3 in Glasgow and 31·5 in Paisley. The 625 deaths in these towns showed an increase of 22 upon the number in the preceding week, and included 25 which were referred to whooping-cough, 22 to measles, 11 to scarlet fever, 6 to diarrhœa, 5 to "fever," 3 to diphtheria, and not one to small-pox. In all, 72 deaths resulted from these principal zymotic diseases, against 90 and 80 in the preceding two weeks. These 72 deaths were equal to an annual rate of 2·8 per 1000, which exceeded by 0·5 the mean rate from the same diseases in the twenty-eight English towns. The fatal cases of whooping-cough, which had been 32 and 25 in the previous two weeks, were again 25 last week, of which 11 occurred in Glasgow, 5 in Edinburgh, and 5 in Dundee. The deaths referred to measles, which had been 43 and 30 in the preceding two weeks, further declined last week to 22, and included 10 in Glasgow, 8 in Paisley, and 4 in Edinburgh. The 11 fatal cases of scarlet fever showed a further increase upon recent weekly numbers; 7 occurred in Glasgow and 2 in Aberdeen. Of the five deaths referred to "fever," 2 were recorded in Aberdeen. The 3 fatal cases of diphtheria were fewer than the number in any recent week, and were all recorded in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 143 and 146 in the preceding two weeks, further rose to 157 last week, and exceeded by 28 the number in the corresponding week of last year. The causes of 53, or more than 8 per cent., of the deaths in the eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 23·0 and 24·4 per 1000 in the preceding two weeks, further rose to 26·4

during the week ending May 9th. During the first five weeks of the current quarter the death-rate in the city averaged 26·4 per 1000, the rate for the same period being 21·8 in London and 19·7 in Edinburgh. The 179 deaths in Dublin during the week under notice showed an increase of 14 upon the number in the preceding week, and included 4 which were referred to whooping-cough, 1 to "fever," 1 to diarrhœa, and not one either to small-pox, measles, scarlet fever, or diphtheria; in all, 6 deaths resulted from these principal zymotic diseases, against numbers declining from 8 to 4 in the preceding four weeks. These 6 deaths were equal to an annual rate of 0·9 per 1000, the rate from the same diseases being 2 in London and 2·3 in Edinburgh. The fatal cases of whooping-cough, which had declined from 7 to 0 in the previous two weeks, were 4 last week. The mortality from "fever" and from diarrhœa showed a decline from that recorded in the preceding week. The 179 deaths in Dublin last week included 29 of infants under one year of age and 48 of persons aged upwards of sixty years; the deaths both of infants and of elderly persons showed an increase upon the numbers in the previous week. Two inquest cases and 2 deaths from violence were registered during the week, and 55, or nearly a third, of the deaths occurred in public institutions. The causes of 19, or more than 10 per cent., of the deaths last week in the city were no certified.

THE SERVICES.

ARMY MEDICAL STAFF.—Surgeon-Major Poole Robert Gabbett is seconded for service on the Staff (dated Jan. 23rd, 1891).

NAVAL MEDICAL SERVICE.—The following appointment has been made at the Admiralty:—Surgeon Percy W. Bassett-Smith to the *Penguin* (dated April 17th, 1891).

VOLUNTEER CORPS.—*Rifle:* 1st Cadet Battalion, the Manchester Regiment: Acting Surgeon A. Hopkinson resigns his appointment (dated May 9th, 1891).—1st Volunteer Battalion, the Royal Scots Fusiliers: Surgeon W. Frew, M.D., is granted the rank of Surgeon-Major, ranking as Major (dated May 9th, 1891).

Correspondence.

"Audi alteram partem."

THE BRITISH INSTITUTE OF PREVENTIVE MEDICINE.

To the Editors of THE LANCET.

SIRS,—At a meeting held at the Mansion House on Dec. 5th, 1889, an Executive Committee was formed to take measures for the purpose of establishing in England a British Institute of Preventive Medicine. The work to be undertaken in the Institute was to be similar to that carried out in the Pasteur Institute in Paris and in the Hygienic Institute in Berlin. The Executive Committee comprises Sir Spencer Wells, Sir James Paget, Sir James Crichton Browne, Sir George Humphry, Sir Henry Roscoe, Sir James Wilson, Professors Brown, Huxley, Horsley, Ray Lankester, and Pemberthy, Dr. Bridgwater, Dr. Holman, Mr. Jonathan Hutchinson, Mr. Watson Cheyne, Dr. Donald Mc Alister, Dr. Withers Moore, Mr. E. Hart, Mr. Sidney Turner, and myself, with Professor C. S. Roy and Dr. Armand Ruffer as secretaries.

On Feb. 13th, 1891, Messrs. Hunter and Haynes, the solicitors to the Executive Committee, made an application to the Board of Trade, praying that the Institute might be registered as a limited liability company with the omission of the word "limited," in order that the public, who are to be asked for subscriptions, should be impressed with the fact that the objects of the Institute were of a purely charitable and scientific nature. Shortly afterwards our solicitors were informed by Mr. Courtenay Boyle, Secretary to the Board of Trade, that a number of petitions had been sent in praying the Board to withhold its licence on the ground that experiments on living animals would necessarily be performed in the Institute. The Executive Committee then requested me to write a letter—a copy of which I enclose—to the President of the Board of Trade, pointing out why, in their opinion, their opponents should not gain their point. This letter was posted by our secretary, Dr. Armand Ruffer, on Wednesday evening, May 13th, 1891; but, on the same day, the solicitors to the Committee received a communication from the President of the Board of Trade to the effect that the Board, without giving any reason whatsoever, had decided to withhold its licence from the Institute.

As chairman of the Committee, I now write to you, Sirs, asking you for some space in your columns to point out these facts to the medical profession, and to ask their support in this struggle against prejudice and ignorance. The Committee have asked the President of the Board of Trade to receive a deputation in order to lay the matter fully before him, and, should he agree to do so, they hope that the medical profession will help them in rendering the deputation as influential and representative as possible. In any case, they hope their medical brethren will assist them in bringing this matter before Parliament and the public if necessary. I am, Sirs, your obedient servant,

JOSEPH LISTER.

P.S.—The Executive Committee of the British Institute of Preventive Medicine would be glad to receive suggestions &c. from gentlemen willing to help them. All letters, communications, &c., should be addressed to Dr. Armand Ruffer, 19, Iddesleigh Mansions, Westminster, London, S.W.

12, Park-crescent, Portland-place, London, W.

BRITISH INSTITUTE OF PREVENTIVE MEDICINE.

To the Right Honourable Sir Michael Hicks-Beach, Bart., President of the Board of Trade.

SIR,—On the 13th of February of the present year Messrs. Hunter and Haynes, Solicitors to the Executive Committee of the British Institute of Preventive Medicine, applied to the Board of Trade for permission to have the Institute registered as a limited liability company with the omission of the word "limited." The objects for which the Committee are anxious to establish the Institute are sufficiently explained in the "Memorandum of Association," and in making the application they wish to impress the public, who are to be asked for subscriptions, with the fact that the objects of the Institute are of a purely charitable and scientific nature.

Shortly stated, the work to be undertaken by the British Institute of Preventive Medicine would be the same as is carried out in similar Institutions in France, Germany, Italy, Roumania, Austria, Turkey, and Brazil. In all these countries bacteriological institutes have been founded by the State. The advantages to the community at large from scientific work in hygiene has led to the endowment of such institutes with land and capital in order that bacteriological investigations may be carried out by skilled workers under the best possible conditions. The Committee do not expect that the English Government will do the same for them, but they may reasonably expect that it will not impede a charitable and scientific scheme. The Committee has been informed by Mr. Courtenay Boyle, Secretary to the Board of Trade, that a number of petitions have been sent in, praying that the Board of Trade may be moved to withhold its licence from the proposed association; and, thanks to the courtesy of the same gentleman, they have been able to obtain a copy of these petitions, which copy was considered by the members. To their great astonishment, they found that the only objection brought forward was the fact that it is proposed to perform experiments on living animals in the Institute. It is not their intention to discuss here the ethics of vivisection, but to point out why, in their opinion, the petitioners should not be allowed successfully to oppose the application of the Committee. The Committee do not ask the Board of Trade to grant them a licence to perform such experiments. It would be absolutely useless for them to do so, for the granting of vivisection licences is, and always has been, under the control of the Secretary of State for the Home Department, who, should they wish to perform experiments on animals, may or may not allow them to do so. The Board of Trade has not the power of giving a vivisection licence. What the Committee do ask from the Board of Trade is that it shall permit the Institute to be registered under Section 23 of the Companies Act, 1867, so that they may ask the public for subscriptions to an undertaking of national importance. The case of the Marine Biological Association is parallel; no difficulty or question was raised about the Board of Trade granting their permission to that body to register in the way above noted, but should the members wish to perform experiments on living animals, they have to get the permission of the Home Office. The Committee beg therefore to submit that the granting by the Board of Trade of the licence asked for would not in any way encroach upon the province of the Home Office, as the question of vivisection will come before the Home Secretary if ever a licence to perform experiments on living animals is applied for.

One of the reasons which make the Committee anxious to obtain the licence of the Board of Trade is that it appears that the Institute cannot be registered under the Companies Act, 1862, as a limited liability company without serious interference with its prospects. They enclose counsel's written opinion, wherein it is evident that, should the Institute be so registered under the Act, it would at any time be possible for the members to wind up the company and divide the money. No one would endow the Institute with funds under such conditions; whereas the Board might make it a condition of granting their licence that all the property of the Institute should be applied to the advancement of science and kindred subjects only, and not be distributed among the members. In this way a security would be given that the funds would be applied for the purposes intended.

The question is one of great public interest and importance, and the Committee trust that, if you hesitate to comply with their request to

permit the Institute to be registered as a limited liability company with the omission of the word "limited," you will do them the honour to receive a deputation in order that the facts may be more fully placed before you. Requesting the favour of an early reply,

I have the honour to be, your obedient servant,
JOSEPH LISTER,
May 13th, 1891. Chairman of the Executive Committee.

THE INFLUENZA.

To the Editors of THE LANCET.

SIRS,—The recent return of influenza in the epidemic form marks the present time as appropriate for recording the impressions which have been gathered since the disease began to spread over the country towards the close of the year 1889; and it seems to be the more desirable to do so as the catarrhal symptoms which occasionally coincide with an access, and the grave complications which too often follow in its train, have a tendency to withdraw attention from the essential nature of the malady and from those precautions which are so much needed in that stage which is too often assumed to be one of recovery, but which is, in fact, an integral and perilous phase of this insidious disease. In order to make my meaning clear, I would call attention to the theory which was broached in the columns of THE LANCET, though not for the first time presented to medical opinion, rather more than a year ago. I allude to the view that influenza is essentially an affection of the cerebro-spinal nerve centres, and that the various catarrhs and local inflammations which are apt to accompany or to follow primary attacks, and may precede as well as follow subsequent accesses, are of the nature of complications and the natural outcome of a condition which is pregnant with grave, although it may be unexpected, possibilities. In support of that theory, I will do no more than briefly review the symptoms which disclose the true nature of influenza in both its stages, although it must be conceded that in some of the milder cases, especially among the very young, they may be so faintly marked and so transient as to elude observation. The more conspicuous may be summarised as follows. In the first stage, pain in the post-orbital and frontal regions, extending to the vertex and occiput and thence to the back, loins, and extremities, and rapidly followed in a considerable proportion of instances by tenderness evoked by percussion of the spinal region, more particularly of the situation of one or more of the medullary enlargements; in the second, altered cerebration and abeyance or perversion of the functions of the spinal centres as indicated by impaired power of mental concentration, loss of memory, depression of spirits, irritability, difficulty of verbal expression, vertigo, night terrors and illusions, polyuria, loss of ocular accommodation, rapid wasting and anæmia, difficulties of respiration, cardiac debility and irregularity, general vaso-motor paralysis, causeless sweating, general loss of muscular tone and energy, and even of correlation, peripheral neuroses too numerous to be specified, and lastly, but not least important, loss of body heat, either continuous or induced, by even slight exertion of either mind or body, and ranging from one to four or more degrees below normal. Leaving aside the consideration of the catarrhal affections of the respiratory and digestive tracts, induced mainly, as I believe, by the direct contagion of fluids which travel along their channels, I ask, Can it be matter for surprise that the organism so gravely attacked in the very centre of its life should fall an easy prey to influences which under other circumstances would be harmless or insignificant, or that a condition, which is too often regarded as one of recovery, should need the protection of such nurturing care, as many have not the patience to endure, unless seriously warned of the dangers which carelessness may entail? It would appear to be sufficiently obvious that the loss of flesh and depression of body heat indicate that the second and really perilous stage of influenza is one in which power of repair is not competent to make good the daily waste, and the diminution of healthy tissue change (due possibly to damage inflicted on the trophic centre) reduces the body heat to a point which, even if those two conditions stood alone, might easily involve danger to health and to life. Such I hold to be the case, and, further, I believe that this period of vital depression may be indefinitely prolonged by efforts to resume habits of mental or bodily activity before the temperature ceases to be liable to subnormal depression, and a progressive increase of body weight affords indication that the balance of waste and repair has been duly adjusted. In fine, influenza bears the stamp which is common to diseases which involve damage to important nerve centres, and demands, as a condition of stable convalescence, a longer period of functional repose than do those in which less delicately organised structures are primarily involved; and, as might be expected from the universality of the mischief it inflicts on the nervous system, it exhibits an exceptional tendency to visit impatience and imprudence with the penalty of relapse, or even of death.

I am, Sirs, yours faithfully,
May 9th, 1891. W. BEZLY THORNE.

To the Editors of THE LANCET.

SIRS,—We hear that authorised inquiry is being, very properly, made into the causation &c. of this malady. But, meanwhile, cannot someone competent to speak on the subject of isolation and disinfection generally advise us as to the probable utility or otherwise of subjecting our bodies, clothes, and houses to processes usual after invasions of other diseases of an infectious character? I am bold, perhaps, in thinking that no one who has persistently and consistently applied heat or sulphurous acid fumigations after such outbreaks can doubt a very pronounced efficacy. But hitherto we have relegated influenza to the limbo of diseases impossible to be dealt with by isolation, and with no attempt to minimise the quantity of poison diffused. Even while not attempting to isolate measles and whooping-cough on a large scale, we still often succeed in preventing their spread within the very narrow limits of a not very large dwelling, and by so much limit the outside spread.

The present Attorney-General once said to me "that he had come to the conclusion that any place as large as London must be so filled with infectious germs of all kinds that any person presenting an appropriate nidus could hardly ever escape." But why do we hear recommendations of immense expenditure on isolation and disinfection, in almost every large community, if there be no more virtue in them than sometimes appears in the scamping builder or the perfunctory clerk of the works? I do very earnestly hope that some discussion of this matter in respect of influenza may kindle some better hope in the breast of the anxious, who now are partially comforted only by prophylactic doses of ammoniated tincture of quinine and assurances that "really, after all, the *mortality* is not so very great *relatively*."

I am, Sirs, yours truly,
Wolverhampton, May 10th, 1891. FREDERIC E. MANBY.

THE USE OF CHLOROFORM.

To the Editors of THE LANCET.

SIRS,—Dr. Dudley Buxton cannot be allowed to depart from his original statement. He described his method of giving chloroform in the following precise terms (the italics are mine): "*My plan* is to use Lister's open method or Krohne and Sesemann's useful modification of Junker's inhaler. I also make it a rule to test the vigour of respiration by placing my hand on the mouth, and to keep a finger upon an artery." It is this plan which I ridiculed. Dr. Buxton now dexterously tries to make it appear that my criticism was directed against Junker's inhaler, and that he gives chloroform on Syme's principles, though Syme never took the pulse as a guide. Dr. Dudley Buxton's plan is impracticable, and its absurdity is only surpassed by the absurdity of the method of another specialist, Mr. Rickard W. Lloyd. Mr. Lloyd proceeds to give chloroform[1] "with the sprinkled lint lying on the separated fingers of my right hand in front of the mouth, which enables me to feel the force of expiration, with my left middle finger on the left temporal pulse, and my left thumb holding up the left upper lid of the patient and testing the corneal reflex when necessary." Mr. Lloyd thus endeavours to obtain information as to the state of the patient from three if not four distinct tactile impressions at the same time, which is just as dangerous as it would be for one of my students to administer chloroform to three or four patients all at once. Dr. Dudley Buxton further states that I must have had many cases of heart failure under chloroform which I have overlooked, because "Surgeon-Major Lawrie has never felt the pulse during chloroformisation." The

[1] Vide THE LANCET, April 4th, 1891.

whole of this statement is a gratuitous invention. All my operations are performed in public; I have never had a case of heart failure, and I frequently take the opportunity of demonstrating that the action of the heart and the pulse are invariably regular when chloroform is properly administered. I do not allow the pulse to be taken as a guide as to the effect of chloroform, because I know it is no less useless than dangerous.

Finally, Dr. Dudley Buxton asserts that the Hyderabad Commission has not proved that there is no such thing as chloroform syncope, because "its conclusions are based upon purely negative evidence." If Dr. Buxton were as familiar with the A B C of logic as he would have us believe he is with the A B C of the chloroformist's duties, he would know that proof of the absence of anything must always be negative proof. The rest of Dr. Dudley Buxton's letter consists of a bald statement of creed, unsupported by any explanatory reasons, and does not call for further notice.

I am, Sirs, your obedient servant,

May 11th, 1891. EDWARD LAWRIE, Surgeon-Major.

THE COMMITTEE ON BRITISH AND FOREIGN SPIRITS.

To the Editors of THE LANCET.

SIRS,—I quite agree with the remarks contained in a leading article in your last week's issue on the report of the British and Foreign Spirits Committee. As yet no authorised report of the committee has been published, but the one which has appeared in the newspapers contains the passage: "Dr. Pavy considers that the silent spirits are innocuous as regards health, although they are insipid and disagreeable." As you rightly observe, under the line of argument taken, such a statement brings the spirits of common use into the position of producing no injurious effects. I am not, however, responsible for the wording of the report in question, and the word "innocuous" was not used by me, and nowhere appears in the shorthand writer's notes of my evidence; nor did I speak of an "insipid" article as being "disagreeable." What I did say was that plain or silent spirit is more innocent than spirit with the by-products, and that the insipid plain spirit is rendered agreeable through the presence of the by-products in the same way as insipid food is rendered agreeable by condiments.

I am, Sirs, your obedient servant,

Grosvenor-street, May 13th, 1891. F. W. PAVY.

PRIVATE DRAIN VENTILATION.

To the Editors of THE LANCET.

SIRS,—The statement of Dr. E. Duncan, as quoted in your issue of May 2nd, to the effect that "there is, in fact, no gas in a sewer that you may not find outside of it," and that "the air of a sewer, when it is properly ventilated, is much better from the chemical point of view than the air of crowded churches and schools, or even than the air of the houses in which one-half of the population of Glasgow lives," is worthy of a far more extended practical application than is given it by sanitary authorities in Europe. The writer, as a sometime sanitary inspector in a large American city, has been often surprised at the opposition made here and on the Continent to a plan of ventilation most commonly in use in the United States, and, so far as he knows, almost uniformly successful. Its principle involves the use of conduits and conductors arranged in the shape of an inverted syphon, the long arm of which is the "standpipe," into which all closets and baths discharge, which passes directly into the open above the roof in equal calibre as below, and which ascends always in the immediate proximity of a chimney flue in constant use. So far, continental and insular engineers agree with us, but the *crux* of the whole matter lies in the position of the shorter syphonic arm, which opens at the ground level through a grating, and communicates of course outside the house with the main drain, the latter being trapped between such communication and the street sewer. I have often tested these adaptations both in winter and summer, the flame of burning paper being uniformly sucked down through the gratings and blown upward from the roof pipes, thus proving the existence of perfect ventilation, with all the security it affords. The fact that I have, in many years' inquiry, never seen such effective arrangements in England must be my excuse for calling attention to the important and undoubtedly true assertions of Dr. Duncan.

I am, Sirs, yours very truly,

H. WEBSTER JONES, M.D. Yale, U.S.A.

Cavendish Mansions, May 9th, 1891.

"THE BREATHING OF A VEIN."

To the Editors of THE LANCET.

SIRS,—In an interesting and learned article "Concerning Bloodletting" published in to-day's issue of THE LANCET, Dr. John W. Ogle recalls Sydenham's description of the operation of venesection in certain cases, as "doing the work of the windpipe"; and in a footnote states that the translator of Sydenham sometimes renders "venam incidere" "to breathe a vein." Dr. Ogle further remarks that the etymology of this expression is not very obvious, but quotes the opinion of Dr. Murray, editor of the New Philological Dictionary, to the effect that the words "breathing a vein" are equivalent to "taking into it breath or air." But, as Dr. Ogle shrewdly observes, "if this be so, the phrase is used without regard to physiological facts."

Some years ago I endeavoured to make out the meaning and origin of this expression which occurs in Dryden's Poem on the death of Oliver Cromwell.

> "War, our consumption, was their gainful trade;
> We inward bled, whilst they prolonged our pain;
> He fought to end our fighting, and assayed
> To stanch the blood by breathing of the vein."

I arrived at the conclusion that the word "breathing" in this connexion was related to the Welsh word *brathu* (pronounced "bräth'e"), "to pierce," "brathu gwythen," meaning to pierce or open a vein. The Welsh word "to breathe" in the sense of respiring is "anadlu."

I am, Sirs, yours truly,

Harley-street, W., May 9th, 1891. JOHN TWEEDY.

RARITY OF PHTHISIS IN THE MEXICAN PLATEAUX.

To the Editors of THE LANCET.

SIRS,—I read in THE LANCET of the 18th inst. your notice of the "Causes and Prevention of Phthisis," by Dr. Ransome. Your reviewer wishes for some authoritative information regarding the extreme rarity of phthisis in the Andes and Mexican plateaux. Having practised many years (twenty-four) at Bogotá, United States of Colombia, my experience there is that phthisis is almost unknown, only one case in a native resident coming under my observation during that time. There can be no doubt as to the comparative immunity of its inhabitants from this disease in the elevated regions mentioned. English visitors have much improved in health, the progress of the disease apparently being arrested.

I am, Sirs, yours faithfully,

South Kensington, S.W., April 27th, 1891. W. L. DUDLEY.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Complimentary Dinner to Sir Walter Foster, M.P.

ON the 13th inst., at the Midland Hotel, Birmingham, a large number of students and practitioners gave a dinner to Sir Walter Foster, M.P., on his retirement from the acting staff of the General Hospital. The chair was taken by Mr. Jordan Lloyd of the Queen's Hospital, and he was supported by Dr. Rickards, Dr. Simon, and Dr. Malins of the General Hospital, with Dr. Suckling, Dr. Carter, and Dr. Purslow of the Queen's Hospital. The chairman referred in eulogistic terms to Sir Walter Foster's long and eminently successful career in Birmingham. Mr. Leonard Gamgee then read the following address, which was signed by over three hundred names:—

TO SIR WALTER FOSTER, K.B., M.P., M.D., F.R.C.P.

(Consulting Physician to the General Hospital, Senior Professor of Medicine in Queen's College, Birmingham, Member of the General Medical Council.)

We, the undersigned Past and Present Students of the Birmingham School of Medicine, and other members of the medical profession, feel that we cannot let pass the occasion of your resignation of the post of

honorary physician to the General Hospital without expressing our appreciation of the benefits we have received at your hands, and of the valuable services you have rendered to the Birmingham Medical School. Your connexion with the Queen's and General Hospitals—extending over a period of twenty-five years,—the value and originality of your clinical lectures, the soundness of your teaching, and your never-failing kindness and courtesy, have been such as to merit the highest esteem of the successive generations of students who have profited by your instruction. We trust that you may be spared for many years to enjoy health and prosperity, and may continue an active member of that profession which you have served so faithfully and so well.

In reply, Sir Walter Foster alluded in feeling terms to the friendships he had formed and the universal consideration he had always met with from the students of the Birmingham School of Medicine. He still hoped to spend many more years of active service among them, and to continue his duties as Professor of Medicine in the College.

Hospital Saturday in Birmingham.

Strenuous efforts have been made this year to bring the total amount of this collection to £10,000. There is every reason to believe that this will be more than realised when the returns are finally made up. If so, it will be a splendid commentary upon the energy and activity of those who have organised and conducted such a laudable enterprise.

Birmingham, May 13th.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

Opening of Dame Margaret's Home at Washington.

SOME few years ago, as noted in this correspondence, Sir Lowthian Bell made an offer of his seat, Washington Hall, near Durham, to the Corporation of Newcastle, to be used as a Convalescent Home. Some legal difficulties, I understand, prevented the Corporation from accepting the generous offer. Meantime, Sir L. Bell's intentions as regards the purposes of the hall in the future have not been allowed to drop. On Saturday last it was opened by the Mayor as a Home for Waifs and Strays, under the title of "Dame Margaret's Home." The work of this charity has been carried on at Gosforth, a suburb of Newcastle, by Miss Watson, the philanthropic lady who originated it; and now Sir Lowthian Bell's desire is fulfilled, and the name of his departed wife, as he feelingly expressed it, will in the future be associated with this beneficent work. As well as the poor children received under the wide term of waifs and strays, it is also intended to receive nearly 100 children in the year from the Royal Infirmary, Newcastle, and other medical institutions of the five northern counties in the year as convalescents. American tourists will still visit Washington, county Durham, from its associations with the family of their great general and patriot, for from the the family of Wessington, who held this manor (*temp.* Richard III.), John Washington was descended, from whom the ninth in descent was the famous George Washington, first President of the United States.

Cumberland.

At the last meeting of the Carlisle Microscopical Society, the President, Mr. C. S. Hall, M.R.C.S., gave an interesting lecture on the Leech and its Work, and he mentioned incidentally that formerly, when leeching was more prescribed than at present, their gathering used to be regularly carried on in ponds in Cumberland. The treasurer of the Cumberland Infirmary, Carlisle, has received £200 from the executor of the late Thomas Nelson, Esq. Sunday last was Hospital Sunday in Cumberland and Westmoreland, and collections were made on behalf of the medical charities of the two counties—namely, Cumberland Infirmary, Carlisle Dispensary and Fever Hospital, Cumberland and Westmoreland Convalescent Institution at Silloth, and the Workington Infirmary. This last institution has received the offer of £500 from Mrs. Curwen towards building a new wing, the present accommodation being inadequate. The offer is made as a memorial of Mrs. Curwen's eldest son, Mr. E. D'Arcy Curwen, and has come when the committee has been much straitened for means to undertake the extension. The population of Carlisle is said to be 39,176, as compared with 35,865 in 1881. The increase in the population in the last decade has therefore been 3311.

South Shields.

At the late meeting of the South Shields Town Council, Dr. T. Eustace Hill, the medical officer of health, reported that the death-rate for the month corresponded to an annual death-rate of 25·9 per 1000, and the zymotic rate was 2·7 per 1000; but the births, Dr. Hill said, of 335 in five weeks, seemed to indicate that the population of South Shields (72,000) was considerably under-estimated. It is contemplated at South Shields to take an important sanitary step by using salt water for the streets and flushing the sewers. The Shields people, too, are about to bring the advantages of their town as a watering place before the public this season by systematic advertising. Certainly the place has been immensely improved and developed during the past few years, and possesses very fine baths, a park, and a pier hardly to be surpassed, but the public require reminding of these things.

A Broad-minded Board of Guardians.

The Sunderland Board of Guardians have sent a cheque for £100 to the Infirmary of their town, and also one for £25 to the Monkwearmouth and Southwick Hospital. This they justify by saying that the support of these hospitals is true economy, as these institutions are the means of ultimately saving the pockets of the ratepayers by preventing the sick poor from becoming public burdens.

Newcastle-upon-Tyne, May 13th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

EDINBURGH.

Edinburgh Medico-Chirurgical Society.

AT the meeting of this Society last week the principal paper was by Dr. Alexander James on Putrid Pleural Effusions." He divided these into three groups: (1) Gangrenous effusion, with gangrenous tissue present in the effusion from separation of the gangrenous tissue; (2) cases in which gangrene was diagnosed as accompanying the putrid effusion from the fetid expectoration; and (3) cases in which there was neither fetid expectoration nor discharge of gangrenous lung through the opening in the chest-wall. After enumerating the antecedent causes which are recognised as sometimes leading to putrid effusion, he dealt more especially with those in which there was no evidence of gangrene discoverable during life or perhaps after death. He was disposed, however, to regard these as really due to a localised area of pulmonary gangrene, as he considered an organism could not be carried through the normal lung and pleura to the seat of the inflammation. He gave details of a number of cases he had seen, and referred to cases recorded by other observers. As regards treatment, he advocated immediate operation. Among the speakers, Mr. Caird thought washing out the pleura was unnecessary; Dr. W. Russell discussed the etiology of the condition with reference to suggestions he had made in a paper written a number of years ago; and Mr. A. G. Miller contended that there was evidence which favoured the view that the putrefactive organism might pass through the lung tissue to the seat of the pleurisy and determine its putridity.

The Water-supply.

Some months ago it was intimated here that engineers were appointed by the Edinburgh and District Water Trustees to examine the Edinburgh water-supply, and to report whether they considered it necessary to augment the supply, or if additional supply might not be obtained by taking efficient means to check waste. The report has reached the trustees, and it is said the engineers are unanimous in their opinion that an additional water-supply should be arranged for without delay. The text of the report will not be made public until it is printed and in the hands of the trustees.

Health of the City.

The mortality last week was 115, making the death-rate 22 per 1000. Diseases of the chest accounted for 44 deaths, and zymotic diseases for 10, of which 5 were due to whooping-cough. The intimations for the week comprised: typhoid fever 5, diphtheria 3, scarlatina 10, and measles 118. In Leith the number of deaths was 24, making the mortality 18·35 per 1000.

GLASGOW.

Population and Death-rate of Glasgow.

In his last report to the Health Committee, Dr. J. B. Russell makes special reference to the recent census. He

notes that the census figures do not include the population of the harbour, the schedules for which were collected by the officers of H.M. Customs and transmitted direct to the Registrar-General, with this explanation: the uncorrected summation of the population of (municipal) Glasgow on April 5th was 564,975; on April 4th, 1881, the population, including shipping, was 511,415, so that as they stand the figures show an increase of over 10 per cent. Between 1871 and 1881 the rate of increase was only 4 per cent. The census is taken at the beginning of the second quarter in the year. For statistical purposes it is the population at the middle of the year (June 30th) that is required, and in order to get this a quarter's increase at the inter-census rate must be added. At present also we must add something for the shipping, and shall assume that it remains at the same figure as in 1881. We thus have the following:—

Population April 5th	564,975
Increase to June 30th	1,339
Add for shipping	700
Population June 30th, 1891	567,014

Dr. Russell's estimate of the population at midsummer, 1890, was 567,656. During the ten years 1881-90 there were 131,406 deaths registered, an average of 13,140 per annum. The mean population is 538,000, so that the mean death-rate in the decade was 24·4 per 1000. The following shows the mean death-rate in successive periods since the commencement of registration in 1855:—

		Increase.	Decrease.
6 years, 1855–60	29·9	... —	... —
10 years, 1861–70	30·4	... 0·5	... —
10 years, 1871–80	28·6	... —	... 1·8
10 years, 1881–90	24·4	... —	... 4·2

A decrease of 4·2 per 1000 per annum means 22,596 lives saved in the ten years. The death-rates will in future be calculated on a population of 567,000. The results of sanitation shown in the above statement are most satisfactory, and encourage the hope that, as the steady application of the somewhat limited powers hitherto exercised by the local authority has produced such effects, so in the next decade the additional power conferred by the Glasgow Police (Amendment) Act and the Housing of the Working Classes Act, which come into operation this year, may lead to still further progress in the same direction.

DUBLIN.

(FROM OUR OWN CORRESPONDENT.)

Royal College of Surgeons in Ireland.

A MEETING of the Fellows will be held on Friday, the 15th inst., to witness the election of examiners for the ensuing year. For the Letters Testimonial and Fellowship there will be four examiners in anatomy and surgery, two examiners in physiology, histology, and pathology, and one each in midwifery, chemistry and physics, and ophthalmology. For the diploma in midwifery three examiners, five for the diploma in public health, six for the diploma in dentistry, and two in general education. A meeting also of the Fellows will be held on May 30th to receive the annual report of the Council. For the examinerships in anatomy and surgery a large number of candidates may be expected, and the contest will be a close and exciting one. The President, Vice-President, and Council have named Dr. Henry Fitzgibbon, J.P., and Sir Charles Cameron as representatives of the College at the International Hygienic Congress.

Mercer's Hospital.

It is a subject of regret that this institution, which is doing good work, expended last year £1220 16*s.* 4*d.* beyond its income. Some of this expenditure, however, was due to the rebuilding of portions of the old fabric not immediately connected with the new wing, at a cost of £529 19*s.* 1*d.* There was a falling off last year in the amount received from bequests and donations.

Outbreak of Fever in Tullamore Prison.

In consequence of the occurrence of typhoid fever among the prisoners confined in this gaol, those with a short sentence to run have been released, and the rest distributed among other prisons in adjoining counties. The only serious case was that of Mr. Cullinane, who at the outset was suspected to be suffering from influenza, but his illness turned out to be typhoid fever. Complaints have been made against the medical officer of the prison of carelessness or incapacity for not recognising the disease in the commencement, but surely this is most unfair and unjust. To make a positive diagnosis in the very early stage of typhoid fever is difficult, if not often impossible; and, in corroboration, it may be mentioned that two other medical practitioners, both friends of Mr. Cullinane, also concurred in the treatment and diagnosis.

Lady Combermere's Bequest of £25,000 to the North Infirmary, Cork.

The petition of the trustees of this hospital is before the courts in Dublin, and it is anticipated that it will be permitted to allocate the greater portion of the bequest for building a new hospital, while the residue will be invested and the yearly dividends applied to the maintenance of the inmates of the infirmary.

Outbreak of Rabies.

The outbreak of rabies which commenced about six weeks ago near New Ross, co. Wexford, still continues. The guardians of the Union have adopted a resolution requesting the Lord-Lieutenant to issue a proclamation embracing the whole of Ireland to restrain dogs either by muzzle or confinement for the length of time necessary to effectually stamp out the disease.

Limerick Union.

By the death of Mr. O'Connor, F.R.C.S.I., a vacancy had arisen for a dispensary medical officer, and for the past few weeks active canvassing has taken place by the five candidates who competed for the appointment. Two members of the committee travelled from London to record their votes. Ultimately Dr. P. F. Graham was elected.

Mr. Louis A. Byrne, F.R.C.S.I., has been elected surgeon to Jervis-street Hospital.

The medical faculty of the Catholic University have nominated Dr. C. Nixon and Mr. Antony Roche, M.R.C.P.I., delegates to the International Sanitary Congress.

The annual meeting of the Dublin Ladies' Sanitary Association takes place to-day at the Royal College of Physicians.

Dublin, May 12th.

PARIS.

(FROM OUR OWN CORRESPONDENTS.)

Experimental Enterica.

THE exact etiology of typhoid fever may be said to be still a moot question. The consensus of opinion amongst physicians of the British school would appear to be that it yet remains to be proved what *rôle*—whether as cause or effect—the micro-organism known as the bacillus of Eberth plays in the pathology of this common disease. That its presence may be generally demonstrated by the methods of modern bacteriology seems to be admitted on all sides. It is in the estimation of its value as a pathological factor that opinions diverge. On the Continent, where what may be termed applied bacteriology—in contradistinction to the earlier but more theoretical views of our great Jenner and Lister, &c., in England—saw the light, and where its teachings are more readily and perhaps universally embraced, the bacillus of Eberth has assigned to it a place of the first importance. To this view the experiments lately carried out by MM. Gilbert and Girode lend further weight. Briefly, they succeeded in producing what they term experimental typhoid fever, by inoculating guinea-pigs with the bacillus of Eberth. The resemblance between the enteric disease set up in the animals and enterica as observed in the human being was very marked. Of two guinea-pigs experimented upon one died in fourteen and the other in thirty-two days. Both displayed the usual clinical history of typhoid fever—diarrhœa, fever, &c. Post mortem the small intestine was found red and inflamed. Peyer's patches were injected and tumefied, while many presented well-marked ulcers. The liver, spleen, and mesenteric glands were likewise swollen. Histologically the ulcers involved the whole thickness of the mucous membrane. The muscular coat was œdematous and numerous thrombi were observed in the neighbourhood of the ulcers and in the mesenteric glands. The bacillus of Eberth was found in abundance in the ulcerations and

thrombosed vessels. In brief, the evolution, duration, seat, lesions, and clinical history of the communicated disease were typical of ordinary typhoid fever in the human subject, and in the opinion of MM. Gilbert and Girode they were identical. In judging the value of these experiments to sustain the premises taken up—viz., that the microbe in question is the *raison d'être* of typhoid fever—one may be permitted to ask whether, in the process of inoculating animals with this virus, it is chemically and physically possible to be absolutely certain that the fluid injected does not contain a something *plus* the bacillus, and that this something may not, after all, turn out to be the real *materies morbi*. However this may be, it is interesting to note that the foregoing observations go to show that it is by no means essential to the evolution of enterica that the poison be conveyed to its seat of development by way of the mouth (through the air breathed or the aliments ingested), and which may be termed the *viæ naturales* of typhoid fever. In the experiments under consideration the inoculations were made under the skin of the back of the animal, but the poison, as we have seen, soon found its way to its usual seat of evolution.

An Ungrateful Patient.

Dr. Lassalle, physician to the hospital of Villefranche and member of the General Council of the Department of the Rhone, was recently the victim of a cowardly attack on his life by a hospital patient. It appears that the individual in question, whose disease was successfully treated under the care of Dr. Lassalle, was discharged from the hospital as perfectly cured. Having made himself comfortable at home in the institution, he was furious at being obliged to leave, and vowed vengeance, which he quickly carried into effect. He waylaid the man who had re-established his health, and deliberately fired a revolver at him. Luckily the bullet missed its mark, and before he could fire again he was disarmed and handed over to the police. Dr. Lassalle is charitable enough to believe that his would be assassin may be insane, although no signs of mental affection were observed while he was under treatment.

The New Governor-General of Tonkin.

M. Lanessan, the recently appointed Governor-General of Tonkin, is, like many more of the public men of France, a member of the medical profession. He was Member of Parliament for one of the constituencies of Paris in the present Chamber of Deputies, resigning this distinction on his new appointment. He was formerly a surgeon in the French Navy, and a diligent student of natural science, in which section he was a past Assistant-Professor in the Paris Faculty of Medicine. His new post will be by no means a sinecure, for it is admittedly one of the most important and difficult in the French Colonial service. He goes out to it armed with the fullest powers, and accompanied by a numerous civil and military staff. It will be recollected that French medical science has already been similarly represented in the Far East, for the distinguished and regretted physiologist, Paul Bert, was also Governor-General of French Indo-China.

Paris, May 12th.

Obituary.

GAY SHUTE, F.R.C.S.

FEW members of the medical profession had a wider circle of acquaintances or were better known to the senior metropolitan consultants than Mr. Gay Shute of Greenwich. He had one of the largest practices in the district, and was also the father of the profession there, having been in practice at Greenwich for forty-eight years. Gay Shute was an old University College man, having entered as a student so long ago as 1829. He was admitted a Member of the Royal College of Surgeons in 1834, and a Member and Licentiate of the Society of Apothecaries in 1836. In 1860 he obtained a Fellowship of the Royal College of Surgeons. He was also consulting surgeon to the Miller Hospital at Greenwich. On gaining his qualifications he went as house surgeon to the Chichester Infirmary, where he remained for five years. This experience gave him a taste for surgery, and in the early days of his practice especially he used to perform many operations of various kinds. Throughout his career he was looked upon by his professional brethren as an obstetrician of special skill and capacity, a circumstance which brought him a great deal of the consulting midwifery practice in the district where he resided. He was much respected and widely esteemed in Greenwich and Blackheath, and at his funeral on Saturday the Church of St. Alphege was crowded, many hundreds of people being present in order to testify their respect. His partner and friend, Mr. Hartt, received the sympathetic condolences of the very numerous patients who called in order to express their esteem for his late partner.

ROYAL COLLEGE OF PHYSICIANS.

AT a Comitia of the College on the 14th inst., the President, Sir Andrew Clark, Bart., in the chair, Drs. A. H. Carter, R. G. Hebb, Sydney Phillips, J. J. Pringle, W. Pasteur, S. Martin, A. Garrod, and Habershon were admitted to the Fellowship.

A communication from the Public Health Medical Society with reference to a proposed amendment of Clause 35 of the Public Health (London) Law Amendment Bill was received. Dr. Farquharson, M.P., explained that an amendment with respect to the place of residence of the medical officer had been rejected by the Standing Committee on Law, and stated that Mr. G. Bruce's amendment, requiring that medical officers should not engage in private practice as general practitioners during their term of office, had been withdrawn.

Sir Dyce Duckworth was re-elected the Representative of the College in the General Medical Council.

A report was received from the Committee of Management on the alterations in the curriculum and examinations necessary for an extension of the period of study to five years. The report contained the draft of three schemes, which differed mainly in respect of the number and form of the examinations. There was general agreement as to the curriculum and the provision for more clinical study; but whereas the first scheme signed by the three medical members of the committee retained three examinations, as at present, with, however, an interval of three years between the second and final examination, Scheme No. 2, signed by two of the surgical members, suggested a practical and clinical final examination in all subjects, and the intervention of a third examination at the close of the fourth year. The Registrar, in moving that the report be referred to the Council, read communications from the Royal College of Surgeons, to the effect that Scheme No. 2, with some modifications, had been accepted by the Council of that College. A letter from the Physiological Society, urging the College to utilise the fifth year in increasing the preliminary studies in biology and chemistry, was also read. In the discussion, Drs. Priestley and Playfair urged the extension of class instruction in obstetric medicine to six months, and Sir H. Pitman expressed general preference for Scheme No. 2. The motion was then carried, the Council being empowered to confer with Fellows not members of the Council upon the question.

The quarterly report of the examiners for the licence was received.

THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AT an ordinary meeting of the Council, held on Thursday, the 14th inst., the minutes of the quarterly meeting of the 9th April, and of the Extraordinary Meeting of the Council of the 10th April, were read and confirmed.

Mr. Thomas Thorburn was introduced, and the President handed to him the Jacksonian Prize for the past year.

In making their Quarterly Report to the two Colleges, which was approved and adopted, the Laboratories Committee stated that five new applications for permission to work in the laboratories had been received, and that of those who had been at work since the Committee made their last Quarterly Report, all but three had applied for permission to continue their researches.

The President reported the result of the meeting of the

Fellows and Members held on the 11th inst., and read the resolutions proposed at the meeting, which will be found reported on page 1118.

The Secretary called the attention of the Council to the fact that in the Calendar of the College are to be found the names of 176 Members of the College who, according to the dates of their membership, up to the year 1822 inclusive, would be at least ninety years of age, and of whom he could trace only six as still living, and he was authorised to remove from the list in the Calendar the names of the remaining 170 Members.

The annual meeting of Fellows of the College for the election of members of the Council to be held at the College was fixed for Thursday, July 2nd next, at two o'clock P.M., and the usual resolutions were passed as to the sending of notices and the publication of advertisements of the meeting. A letter was read from Dr. Liveing reporting the adoption by the Royal College of Physicians of certain resolutions with regard to the employment of the fifth year of medical study.

A letter was read from the chairman, honorary secretaries, and secretary of the Manchester and Salford Sanitary Association, inquiring whether the Council consider that the practice of hypnotism ought to be placed under control similar to that of vivisection, and, if so, whether they are prepared to support an effort to secure such control. To this question the reply was returned that the Council did not consider it expedient to take any action in the matter.

The President reported, on behalf of the Conversazione Committee, that they had arranged for the conversazione to be held at the College on Monday, August 10th, the date which they found would be the most convenient to the International Congress of Hygiene and Demography.

A letter was read from Dr. Francis J. Allan, Honorary Secretary to the Public Health Medical Society, requesting the Council, on behalf of that Society, to assist Mr. Gainsford Bruce, Q.C., M.P., by petition, and by securing the support of Members of Parliament, in introducing the following words into "The Public Health (London) Law Amendment Bill," viz.:—"Shall not be engaged during the time he shall hold office as such medical officer in the practice of his profession as a general practitioner, and." It was not considered advisable that the Council as a body should petition.

A letter from Dr. J. Holmes, Honorary Secretary of the Association of Certifying Surgeons, was read, thanking the Council for the action they had taken in reference to Clause 19 of the Factories and Workshops Bill, and expressing the hope that the Council would continue their assistance in the event of any attempt being made to reintroduce the clause. The President stated on behalf of himself and the Vice-Presidents that they would still continue to watch the progress of the Bill.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen, having passed the necessary examinations, and having conformed to the by-laws and regulations, were at the ordinary meeting of the Council on the 14th inst. admitted Members of the College:—

Abram, Geo. Stewart, L.R.C.P.Lond., University College Hospital.
Allan, Alexander William, L.R.C.P.Lond., Thornton Heath.
Allott, John Ernest Cecil, L.R.C.P.Lond., Old Kent-road.
Ashworth, William Rushton, L.R.C.P.Lond., Stoke-on-Trent.
Atkey, Percy James, L.R.C.P.Lond., Putney.
Barber, George Walter, L.R.C.P.Lond., Thornton Heath.
Bartlett, Frank Whinfield, L.R.C.P.Lond., Brixham, Devon.
Baskett, Bertram Geo. Mortimer, L.R.C.P.Lond., Cottam, Bristol.
Boake, Basil, L.R.C.P.Lond., Dublin.
Box, Charles Richard, L.R.C.P.Lond., Holmwood, Surrey.
Brett, William George, L.R.C.P.Lond., Shepherd's-bush-road.
Brown, Reginald, L.R.C.P.Lond., St. Bartholomew's Hospital.
Busfield, James, L.R.C.P.Lond., Clapham Junction.
Carling, Albert, L.R.C.P.Lond., Wandsworth-road.
Clegg, Richard, L.R.C.P.Lond., Accrington, Lancs
Collings, Edward Beresford, L.R.C.P.Lond., Barnsley, Yorks.
Collins, Richard Hawtrey, L.R.C.P.Lond., Brixton.
Colyer, Arthur Reginald, L.R.C.P.Lond., Streatham Hill.
Constant, Thomas Edward, L.R.C.P.Lond., Gravesend.
Corner, Albert, L.R.C.P.Lond., Poplar.
Cornish, Edward, L.R.C.P.Lond., Devonport-road.
Cory, Ernest Richard Haines, L.R.C.P.Lond., Buckhurst Hill.
Dale, Cuthbert Bracey, L.R.C.P.Lond., Percy-circus.
Dalzell, Anthony, L.R.C.P.Lond., Workington, Cumberland.
Davies, David Livingstone, L.R.C.P.Lond., Manchester.
Dawson, Cecil Lacey, L.R.C.P.Lond., Regent's-park-road.
De Renzi, Henry Carter Castriot, L.R.C.P.Lond., Wandsworth.
De Segundo, Chas. Sempill, L.R.C.P.Lond., Aldridge-road Villas.
De Silva, Appu Hennedige C., L.R.C.P.Lond., Newcastle-on-Tyne.
De Wet, Peter Christian, L.S.A., Vincent-square.
Dudgeon, Robert Henry Beauchamp, L.R.C.P.Lond., Liverpool.
Ellis, John Constable, L.R.C.P.Lond., Llanfairfechan.
Featherstone, Geo. Wm. Beaumont, L.R.C.P.Lond., Wandsworth.
Finch, Ernest James, L.R.C.P.Lond., Notting-hill.
Ford, Frank Chubb, L.R.C.P.Lond., Woburn-square.
Fox, Arthur Claude, L.R.C.P.Lond., Hampstead.
Francis, John, L.R.C.P.Lond., Grimsby.
Francis, Louis Arthur, L.R.C.P.Lond., Paddington.
Freeman, John, L.R.C.P.Lond., Bristol.
Gardener, Wm. Frederick, L.R.C.P.Lond., South Lambeth-road.
Gornall, John Guest, L.R.C.P.Lond., Lambeth Palace-road.
Hale, Geoffrey Edwd., L.R.C.P.Lond., St. George's Hospital.
Hall, John Moore, M.B. R.U.I., Old Ford-road.
Halsted, Denis Gratwicke, L.R.C.P.Lond., Arundel.
Harden, Edwd. Hy. Thornborough, L.R.C.P.Lond., Camden-road.
Hawke, Edwd. Drummond Hay, L.R.C.P.Lond., King Henry's-rd.
Hawley, Arthur, L.R.C.P.Lond., Coventry.
Hebblethwaite, Alfred George, L.R.C.P.Lond., Yorkshire.
Hey, Charles Edward Milnes, L.R.C.P.Lond., Streatham.
Hoffman, A. Wm. Wistinghausen, L.R.C.P.Lond., Hammersmith.
Holton, Geo. Waddington, L.R.C.P.Lond., Staffs.
Home, John Armistead, L.R.C.P.Lond., Kew.
Ilott, Arthur Talman, L.R.C.P.Lond., Covent-garden.
James, Leo Edward, L.R.C.P.Lond., Stockwell.
Jeffreys, Alfred, L.R.C.P.Lond., South Wales.
Johnson, Frederick, L.R.C.P.Lond., Sevenoaks.
Jones, Henry Thomas, L.R.C.P.Lond., South Wales.
Jordan, John Furneaux, L.R.C.P.Lond., Birmingham.
Keyworth, Arthur Foster, L.K.Q.C.P.I., Marple.
Kirton, Charles Stanley, L.R.C.P.Lond., Forest-gate.
Knevitt, Herbert, L.R.C.P.Lond., Surrey.
Lander, Francis Joseph, L.R.C.P.Lond., Nottingham General Dispensary.
Lansdown, Chas. Ewbank, L.R.C.P.Lond., Bromfield-road.
Lawson, Arnold, L.R.C.P.Lond., Cavendish-square.
M'Connell, James, M.B. R.U.I., Peterborough.
Marshall, Francis Edward, L.R.C.P.Lond., Kingston.
Milton, Wm. Fredk. Edward, L.R.C.P.Lond., Fentiman-road.
Olivey, Wm. James, L.R.C.P.Lond., Stormont-road.
Patterson, Charles Sumner, L.R.C.P.Lond., City-road.
Powell, Charles Marten, L.R.C.P.Lond., Furnival's-inn.
Porter, Charles, M.D. R.U.I., Co. Cork.
Price, Arthur Edward, L.R.C.P.Lond., Folkestone.
Rake, Alfred Theodore, L.R.C.P.Lond., Herne-hill.
Rannie, James, L.R.C.P.Lond., Aberdeen.
Rawes, Charles Kinsmaur, L.R.C.P.Lond., Penge.
Richardson, Horace, L.R.C.P.Lond., Highbury New-park.
Rider, Alonzo George, L.R.C.P.Lond., Highbury-hill.
Rodd, Montague Louis Bouchier, L.R.C.P.Lond., Stonehouse.
Rogers, William Gusterson, L.R.C.P.Lond., Borough.
Rowland, Frank Mortimer, L.R.C.P.Lond., Wolverhampton.
Rudd, Arthur, L.R.C.P.Lond., Charlton.
Saunders, John Harry, M.B. Melb., Maida Vale.
Scudamore, Leonard George, L.R.C.P.Lond., Blackheath.
Seton, Bruce Gordon, L.R.C.P.Lond., Anerley.
Smith, Ernest Newlyn, L.R.C.P.Lond., Huntingdon.
Spensley, James Richardson, L.R.C.P.Lond., Stoke Newington.
Spurr, James, L.S.A., Wood Green.
Spurrell, William Dewing, L.R.C.P.Lond., Falmouth-road.
Stilwell, Geo. Robt. Fabris, L.R.C.P.Lond., St. Thomas's Hospital.
Swinton, Francis Edward, L.R.C.P.Lond., Blackheath.
Syrett, Ernest Frank, L.R.C.P.Lond., Victoria.
Tebbs, William Henry Alisoun, L.R.C.P.Lond., New Cross-road.
Thomas, Abraham, L.R.C.P.Lond., St. Paul-street.
Thorpe, Reginald, L.R.C.P.Lond., Highbury-hill.
Thurston, Hugh Stanley, L.R.C.P.Lond., Chelsea.
Watts, Thomas, L.R.C.P.Lond., Bolton.
Wellington, Richard Henslowe, L.R.C.P.Lond., Fellows-road.
West, Lionel Frederick, L.R.C.P.Lond., Leeds.
Wilks, Herbert Lorraine Earle, L.R.C.P.Lond., Arbuthnot-road.
Williams, Harry Bowen, L.R.C.P.Lond., Tyrwhitt-road.

The following gentleman having previously passed the necessary examinations, and having now attained the legal age (twenty-five years), was admitted a Fellow of the College:—

Thompson, Walter, L.R.C.P.Lond., The Grange, Tadcaster, Yorks, Diploma of Member dated Nov. 10th, 1887.

ROYAL UNIVERSITY OF IRELAND.—The following candidates have passed the undermentioned examinations:—

Doctor in Medicine.—Edmond J. McWeeney.

Bachelors in Medicine, Surgery, and Obstetrics: Upper Pass Division.—*Anna L. Church, *Thomas Jones, James B. McLaren, Charles G. McVicker, *Hester D. Russell, and *Edward J. Walker. (Those marked with an asterisk may present themselves for Honours.)

Pass Division.—Hugh L. Atkinson, Robert Boyd, Christopher Bunton, Robert Carse, Francis L. Dick, John Dodd, Patrick Goold, Samuel Hamilton, Wm. Hartland, Joseph F. Kelly, Nathaniel O. McConnell, John McLeish, Thomas S. McSwiney, Stephen E. Moxley, Henry O'Reilly, Joseph A. O'Sullivan, Alexander G. Robb, Richard G. Thornton, Robert B. Wagner, and John T. Wallace.

UNIVERSITY OF DUBLIN. — At the Trinity Term commencements last week the following gentleman obtained the degree of Doctor in Medicine:—

John Hugh Robert Glenn.

SUPERANNUATION ALLOWANCE. — Mr. W. T. Hudson, M.R.C.S., lately medical officer, South District, Clerkenwell, has been awarded by the Holborn guardians a superannuation allowance of £61 5s.

A HOSPITAL, containing accommodation, it is said, for from 1000 to 1500 patients, has been opened at Constantinople.

THE ROYAL VACCINATION COMMISSION.—Another sitting of this Commission was held on Wednesday, Lord Herschell occupying the chair. Mr. Maskell, vaccination officer of the Leicester Union, and Mr. Hopwood, Q.C., Recorder of Liverpool, were under examination. The Commission is now adjourned for the Whitsuntide recess.

METROPOLITAN OPEN SPACES.—The Commons Preservation Society, the Kyrle Society, the Metropolitan Public Gardens Association, and the London Playing Fields Committee recently held a conference at the rooms of the Society of Arts, to consider the future provision of open spaces for London. The attendance was large and influential. A paper was read on the "Taxation of New Ground Rents to provide Open Spaces for London." It was urged that a fund appropriated specially to the supply of additional spaces was required, and the taxation of new ground rents was suggested for raising the necessary means.

ROYAL SEA-BATHING INFIRMARY, MARGATE.—On Monday the Marquis of Lorne occupied the chair at the festival dinner, held at the Freemasons' Tavern, Great Queen-street, in support of this institution, which was founded at Margate in 1791 for the treatment of scrofula. The insufficiency of the ordinary income had necessitated the absorption of a large portion of the small invested capital, which now amounted to only £6791. The directors were anxious to establish a special centenary endowment fund of £50,000, in view of the growing demands from the continual increase in the number of patients. Lord Lorne earnestly supported the claims of the charity for additional public generosity. Donations were announced amounting to £2152, an anonymous friend contributing £1000, Mr. C. A. Swinburne £250, and Mr. Thomas Dunn 100 guineas.

NATIONAL SOCIETY FOR THE PREVENTION OF CRUELTY TO CHILDREN.—The Lord Mayor presided at the annual meeting of this Society, held at the Mansion House on Tuesday. The Princess Louise and a large influential company attended. The annual report showed that the past year had been one of considerable progress financially, and the sphere of the Society's work had been extended. The income had risen from £8871 to £19,421, albeit there was a deficiency of £992. It had sixty aid committees in England, two in Wales, and three in Ireland. During the two years of its existence the Society had dealt with 10,169 cases of alleged cruelty, of which 8810 were not doubtful. It had given warning in 5054 cases, while 963 were taken into the magisterial courts, 92 per cent. convictions being the result. The report was adopted.

BEQUESTS AND DONATIONS TO HOSPITALS.—The late Mr. Robert Thomas, solicitor, Sunderland, bequeathed £500 to the Sunderland Infirmary.—The Duke of Rutland has given £300 towards the rebuilding fund of the Derbyshire Infirmary.—Mrs. Benyon of Reading has sent a donation of 500 guineas towards the expenses of the Royal Berks Hospital.—The late Mr. William Cramond of Derby left by his will £500 each to the Derby Infirmary and Derbyshire Children's Hospital.—Mrs. M. F. Burgess, late of Birkenhead, bequeathed £100 each to the Eye and Ear Institution and the Sick Children's Hospital, Birkenhead, and £200 to the Birkenhead Borough Hospital.—Mrs. Rogers, of Woodfields, Weston-under-Penyard, has given £100 to the capital fund of the Cottage Hospital, Ross.—The Corporation of London has granted 50 guineas to the City Orthopædic Hospital and 100 guineas each to Queen Charlotte's Lying-in-Hospital and the Royal Hospital for Children and Women.—The late Miss Jarman of Slough bequeathed £1000 to the Windsor Infirmary.—The Clothworkers' Livery Company has given £50 to the Great Northern Central Hospital Building Completion Fund.—The committee of the Worcester Infirmary has received a donation of £50 from Mr. Greswolde Williams for the benefit of convalescent patients.—The workmen of Sir W. G. Armstrong, Mitchell, and Co., at Elswick, Newcastle, have contributed for the quarter ending March 31st the sum of £344 17*s.* 3*d.* to the medical charities.—The workmen of Messrs. Hawthorn, Leslie, and Co., St. Peter's and Forth Banks, Newcastle, have contributed for the quarter ending April 18th the sum of £72 6*s.* to the medical charities.

MEDICAL MAGISTRATE.—Dr. Pughes of Bethesda has been placed on the Commission of the Peace for the county of Carnarvon.

FOOTBALL CASUALTY.—During a match at Govan, on the 6th inst., between the Mayfield and Claremont Clubs, a youth had his collar-bone fractured.

ADULTERATING MEDICINE.—A chemist of St. John's Hill, Shrewsbury, has been fined in each of two cases for selling two quantities of Friar's balsam, as medicine for internal use, in the manufacture of which methylated spirit had been used, instead of spirits of wine.

NOTTINGHAM AND MIDLAND EYE INFIRMARY.—This institution maintains its career of usefulness. Year by year it bestows its benefits to a steadily increasing number of patients. During the past year the number of new cases was 3354, thirty over the previous year, and the largest number treated since the establishment of the infirmary. There were 291 in-patients, 698 operations of a serious nature were performed, and 319 were supplied with spectacles. The building fund now amounts to about £1600. The institution is in a sound financial condition.

THE NEW DUFFERIN HOSPITAL, CALCUTTA.—Her Excellency the Marchioness of Lansdowne performed the ceremony of opening this new hospital for women and children on March 4th in the presence of a large and distinguished assemblage of both Europeans and natives. The present structure is a two-storeyed building, with two wards each, containing nine beds on each floor. The lower floor will be reserved for Hindoo patients and the upper floor for Mahommedans and others. The arrangements of each floor are complete in themselves. The total cost of the land and building amounts to about 107,000 rupees.

INCREASED HOSPITAL ACCOMMODATION IN MANCHESTER.—The board of management of the Manchester Royal Infirmary have rejected the offer of the Council of Owens College of a site for an extension of the hospital on the Stanley Grove estate, chiefly on the ground that the proposed new hospital would be much more costly than the provision of an equal number of beds in connexion with the present infirmary site; that it would not be more, but less, convenient for advanced students than an extension of the present building; and that it would not be so convenient to the poor and those requiring the infirmary as an enlarged building on the present site. The board consider it an essential thing that a hospital in a place like Manchester shall be accessible to those employed in factories and workshops or brought in from neighbouring parts by railway, and think that the present site answers much more to this requirement than the proposed one. The Medical Board of the infirmary have issued a statement, signed by Dr. James Hardie (chairman) and Dr. James Ross (vice-chairman), strongly approving the action of the Board of Management, and emphasising the great facilities for clinical instruction afforded at the present time, which, with the proposed extension, would meet any demands likely to be made even by a large augmentation of the medical school. They declare that the infirmary is as free from septic disease as any hospital in England, and they quote the opinion of the late Mr. John Netten Radcliffe, that the disadvantages attaching to the present site are not of a nature to outweigh the more serious consideration which attaches to readiness of access to a surgical hospital for the population it is intended to serve.

MEDICAL NOTES IN PARLIAMENT.

Vaccination.

IN the House of Lords, on Monday last, Lord Stanley of Alderley called the attention of the House to portions of the second report of the Royal Commission on Vaccination, and asked the Government whether they would provide debtor's treatment instead of criminal treatment for persons convicted under the Vaccination Acts. He did not wish to raise any medical discussion on the subject, but merely to urge that from the evidence parents who refused obedience to the vaccination laws had, in many cases, good grounds for their refusal. Of twenty-eight witnesses examined, sixteen had refused to allow their children to be vaccinated because they knew of twenty-four cases of children dead or injured by vaccination. These twenty-eight witnesses had been subjected to 413 prosecutions.—Lord de Ramsey said that in all cases but one the proceedings were strictly legal. Prisoners who were convicted, not of an offence, but with a non-compliance with an order of the court, were now treated under the rules of the Secretary of State, and were subject to the special rules applying to debtor prisoners.

Royal Commission on Tuberculosis.

In the House of Commons, on Monday last, Mr. Rowntree asked that the medical officers of health who had furnished contributory information towards the preparation of the report on the Royal Commission on Tuberculosis should each be furnished with a copy of the report.—Mr. Ritchie replied that the Local Government Board were in the habit of forwarding copies of such reports on local inquiries to local officers who had given assistance to the Board's inspectors in the inquiries. It is also the practice of the Board to distribute a certain number of copies of the annual report of the medical officer of the Board. Any application that the Board may receive for such reports would be considered with the desire to meet them, as far as is practicable, with the limits which may be fixed by the Treasury.

Influenza.

In reply to questions by Mr. Caldwell and Mr. Vincent, Mr. Plunket, the First Commissioner of Works, stated that he was well aware of the ravages which the prevailing epidemic had made amongst the members of this House, and he had given directions that the committee rooms should forthwith be fumigated with sulphur. He would adopt at once the same process in such other parts of the House as it may seem possible at once, and would avail himself of the recess for completing the operation.—The Chancellor of the Exchequer: With regard to the question put to me, I have seen the report to which the hon. member for Sheffield refers, and the House will, I am sure, feel sympathy with the sufferings of the population from this disease. But I am glad to see in the very paper to which the hon. gentleman has called attention that there is universal testimony to the fact that the number of cases is declining, and that in most of the works and places of business the pressure is passing away. I see that one medical man who had been overworked has now only two cases on his hands, so I trust that the hon. member will find that the disease is declining among his constituents.

THE LONDON WATER-SUPPLY.

The Select Committee on this Bill resumed on Wednesday under the presidency of Sir Matthew White Ridley. The Bill of the Southwark and Vauxhall Water Company was proceeded with. Mr. Balfour Browne, Q.C., complained that in the question put at the previous sitting by Mr. Freeman there was an allegation that, because the intakes were below Staines, the water was not fit for consumption in London. No one had ever dreamed that the question of the purity of the river would be brought up under this Bill. Mr. Freeman, for the London County Council, said that the Bill proposed to raise money for filtration purposes, and it was to that point that his questions were directed. Mr. Stoneham, assistant secretary to the Board of Trade, was examined by the chairman. General Scott, water examiner of the Local Government Board, in reply to the chairman, considered that the water supplied by this company stood very high as regards quality.

METROPOLITAN ASYLUMS BOARD.

Return of Patients remaining in the several Fever Hospitals of the Board at midnight on May 12th, 1891.

Hospital.	Beds occupied.						Total accommodation.
	Scarlet fever.	Diphtheria.	Typhus fever.	Enteric fever.	Other diseases.	Total.	
Eastern Hospital	177	56	3	45	..	281	442
North-Western Hospital	133	34	..	11	1	184	443
Western "	135	13	..	14	1	163	224
South-Western "	139	27	..	9	1	176	240
South-Eastern "	139	19	..	20*	..	178	461
Northern "	155	10	..	..	..	165	480
Totals	883	159	3	99	3	1147	2391

SMALL-POX.—*Atlas* hospital ship, 35.

* Infant with mother.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

ABRAHAM, P. S., M.A., M.D., B.Sc., has been appointed Honorary Physician to the Western Skin Hospital, Great Portland-street.

ALLAN, F. J., M.D., has been appointed Clinical Assistant to the Western Skin Hospital, Great Portland-street.

ALLDEN, SIDNEY, M.D. Durh., has been appointed Resident Medical Officer to the Hospital for Consumption and Diseases of the Chest, Brompton.

BENSON, ANNETTE M., M.B., B.Sc. Lond., has been appointed Resident Clinical Assistant to the Paddington Infirmary, Harrow-road.

BIERNACKI, JOHN, M.B. Glasg., L.R.C.P. & S. Edin., &c., has been appointed Resident Medical Officer to the Hospital for Consumption and Diseases of the Throat, Manchester.

BRODIE, THOMAS S., M.R.C.S., L.R.C.P., has been appointed Demonstrator of Physiology to King's College, London.

BURTON-FANNING, F. W., M.B. Camb., &c., has been appointed Physician to the Jenny Lind Infirmary for Sick Children, Norwich.

CROUCH, E. T., M.R.C.S., L.S.A., has been appointed an Honorary Surgeon to the Royal Portsmouth, Portsea, and Gosport Hospital.

DICK, JAMES, M.D. Glasg., L.R.C.S. Edin., has been appointed Medical Officer for the Harrington District of the Whitehaven Union.

DODSON, ARTHUR E., M.R.C.S., L.R.C.P., has been appointed Medical Officer to the Royal Victoria Patriotic Asylum for Girls, Wandsworth Common.

EYTON-JONES, J. A., L.S.A., has been appointed Medical Officer for the Gringley District, Yorks.

GIBSON, E. V., M.B., C.M., has been appointed House Surgeon to the Devonshire Hospital, Buxton.

GILES, O., L.R.C.P. Lond., M.R.C.S., has been reappointed Medical Officer of Health for the Sleaford Rural and Urban Sanitary Districts, Lincolnshire.

GILPIN, FRANK, M.R.C.S., has been appointed Medical Officer, Stratford-on-Avon.

GRAY, M. D., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer to the Drumlish Dispensary, co. Longford.

GRIFFITHS, GILBERT H., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon to the Wallasey Dispensary, vice Dr. Whiteley.

HENDERSON, JANE B., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Third Assistant Medical Officer to the Holloway Sanatorium, Virginia Water.

KER, ALICE J. S., L.K.Q.C.P. Irel., L.R.C.P., L.R.C.S. Edin., has been appointed Honorary Surgeon to the Birkenhead Lying-in Hospital, vice Lamb, deceased.

LAING, CHARLES F., M.B., C.M. Glasg., has been appointed Assistant Medical Officer to the Greenock Parochial Asylum and Poorhouse at Smithston, vice G. A. Bannotyne, resigned.

LOGAN, THOS., M.D. Aberd., L.F.P.S. Glasg., has been appointed Medical Officer, North Brierley Union.

LUMLEY, B., M.R.C.S., has been reappointed Medical Officer for the Northallerton District of the Northallerton Union.

MONTEAGLE, H. W. B., M.D., Glasg., has been appointed Medical Officer to the Manchester and Salford Provident Dispensaries Association.

O'GORMAN, R. P., L.K.Q.C.P., L.R.C.S. Irel., has been appointed Medical Officer to the Manchester and Salford Provident Dispensaries Association.

OLDHAM, MONTAGUE W., M.R.C.S., L.R.C.P., L.S.A., has been appointed Surgeon to the Coventry Provident Dispensary.

POWELL, G. W., M.B., C.M. Dubl., has been appointed Physician to the Birmingham Children's Hospital, vice Suckling, resigned.

ROBINSON, JAMES, M.D. Brussels, L.R.C.P. Edin., M.R.C.S., has been reappointed Medical Officer of Health for the Turton Urban Sanitary District.

RUTHERFORD, THOS., M.B., C.M. Glasg., has been appointed Medical Officer for the County of Bute.

SALTER, F. J., L.R.C.P., L.R.C.S. Edin., has been appointed Assistant House Surgeon to the Devonshire Hospital, Buxton.

SMITH, HENRY, M.B., C.M. Durh., has been appointed Medical Officer for the St. Nicholas District of the Durham Union.

TIPLADY, WM., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., L.M., has been appointed Acting Surgeon to the 5th V.B. Royal Highlanders.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement.

BOROUGH OF PLYMOUTH.—Medical Officer of the Borough Lunatic Asylum. Salary £400 per annum, with furnished house in the Asylum at Blackadon, near Plymouth. Gas, coal, and vegetables.

BLACKBURN AND EAST LANCASHIRE INFIRMARY.—Junior House Surgeon. Salary £50 per annum, with board, washing, and lodging.

CANCER HOSPITAL (FREE), Fulham-road, S.W.—Honorary Pathologist.

CANCER HOSPITAL (FREE), Fulham-road, S.W.—Surgeon.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria-park, E.—House Physician. No salary. Board and residence and an allowance for washing. (Apply to the Secretary, at the Office, 24, Finsbury-circus, E.C.)

COUNTY ASYLUM, Whittingham, Preston, Lancs.—Assistant Medical Officer and Pathologist. Salary £200 a year, with board, lodgings, washing, and attendance.

COUNTY BOROUGH OF SHEFFIELD.—Medical Officer of Health for the Borough. Salary £500 per annum. (Apply to Dr. J. W. Pye Smith, Town Clerk, Sheffield.)

COUNTY OF CAITHNESS.—Medical Officer of Health for the County. Salary £300 sterling, with £50 for travelling and other expenses, except forms and official stationery and postages. (Apply to Mr. Brims, County Clerk, Thurso.)

DERBY AMALGAMATED FRIENDLY SOCIETIES' MEDICAL ASSOCIATION.—Assistant Surgeon. Salary £160 per annum (out-door), with additional fees for Midwifery of 5s. 3d. in each case. Salary to be advanced under certain conditions.

DUNSTABLE FRIENDLY SOCIETIES' MEDICAL ASSOCIATION, Dunstable, Beds.—Dispenser. Salary £50 per annum.

DUNSTABLE FRIENDLY SOCIETIES' MEDICAL ASSOCIATION.—Resident Medical Officer. Commencing salary £180, rising £10 per annum to £220, with residence, garden, and conservatory (rates and taxes free). Conveyance provided. (Apply to the Hon. Secretary, Princes-street, Dunstable, Beds.)

GENERAL HOSPITAL, Birmingham.—Assistant Physician for three years. Honorarium £100 per annum.

GENERAL HOSPITAL, Birmingham.—Honorary Surgeon.

GENERAL HOSPITAL FOR SICK CHILDREN, Pendlebury, Manchester.—Junior Resident Medical Officer for one year. Salary £80 per annum, with board and lodging.

HANTS COUNTY ASYLUM, Knowle, Fareham.—Third Assistant Medical Officer. Salary £100 per annum, increasing to £125 after twelve months' service, with furnished apartments, board, washing, and attendance.

HARTLEPOOL UNION.—Medical Officer and Public Vaccinator for the District of Greatham. Proposed salary, exclusive of extras, £50 per annum. (Apply to the Clerk, Board-room, Municipal Buildings, West Hartlepool.)

KIDDERMINSTER INFIRMARY.—House Surgeon. Salary £140, increasing by £10 per annum to £170, with rooms in the Infirmary and attendance.

LIVERPOOL ROYAL INFIRMARY.—Honorary Assistant Surgeon.

LEAMINGTON AMALGAMATED FRIENDLY SOCIETIES' MEDICAL ASSOCIATION.—Resident Medical Officer. Salary £200, £50 allowed for cab fare, or towards horse and trap, midwifery fees, &c., with residence, coachhouse and stable, rent and taxes free. (Apply to the Secretary, 91, Queen-street, Leamington.)

M.D., care of P. Dixon, Esq., 13, Gray's-inn-square, W.C.—Assistant Medical Officer in a large Metropolitan Lunatic Asylum. Salary to commence at £100 a year, with board, lodging, washing, &c.

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill, Stoke-upon-Trent.—Assistant House Surgeon. Board, apartments, and washing. No salary.

NOTTINGHAM BOROUGH ASYLUM.—Locum Tenens for a month. Remuneration £2 2s. per week, with apartments, board, and washing.

NOTTINGHAM BOROUGH ASYLUM.—Assistant Medical Officer Salary £125 per annum, with apartments, board, and washing.

ROYAL BERKS HOSPITAL.—Physician.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William-street, West Strand.—House Surgeon.

SALFORD UNION.—Assistant Medical Officer for the Union Infirmary, Hope, near Eccles. Salary £130 per annum, with furnished apartments in the Infirmary. (Apply to the Clerk to the Guardians, Union Offices, Eccles-new-road, Salford.)

UNIVERSITY OF GLASGOW.—Assistant Examiner in Physiology. The annual fee for the Examinership is £30. (Apply to Mr. Clapperton, 91, West Regent-street, Glasgow.)

VESTRY OF FULHAM.—Medical Officer of Health for the parish of Fulham for one year. Salary £400 per annum. No fees allowed for travelling in the parish. (Apply to the Clerk of the Vestry, Town Hall, Walham-green.)

WARNEFORD HOSPITAL, Leamington Spa.—House Surgeon. Salary £100 per annum, with board, washing, and lodging.

Births, Marriages, and Deaths.

BIRTHS.

HOFFMEISTER.—On May 4th, at High-street, Gosport, the wife of Dr. John B. Hoffmeister of a daughter.

HUNT.—On May 7th, at Crouched Friars, Colchester, the wife of Edgar A. Hunt, M.R.C.S., of a son.

JOHNSON.—On May 8th, at Cortina, Netherhall-gardens, N.W., the wife of George Lindsay Johnson, M.D., F.R.C.S., of a son.

MARRIAGES.

BARTLETT—SIBLEY.—On May 6th, at All Souls' Church, Langham-place, Hedley C. Bartlett, M.R.C.S., L.R.C.P., of Saffron Walden, to Flora Alice, third daughter of Septimus W. Sibley, Esq., of Harley-street.

FRAZER—FOTHERGILL.—On May 9th, at Jesmond Church, Newcastle-on-Tyne, Peter Thomas Frazer, Army Medical Staff, Retired, to Mary, widow of Joseph Fothergill, and youngest daughter of the late William Ritson Dryden, of Cottingham, East Yorkshire.

POULTER—VORLEY.—On May 6th, at St. Alban's Cathedral, Arthur Reginald Poulter, M.R.C.S., L.R.C.P. Lond., fourth son of F. Driffel Poulter, of The Hawthorns, Shortlands, Kent, to May, eldest daughter of William Vorley, of Norton House Camden-road.

STIRLING—BROMLEY.—On May 6th at St. George's Church, Bloomsbury, by the Rev. A. B. Boyd Carpenter, M.A., Rector of the Parish, Alexander Williamson Stirling, M.D., C.M. Edin., D.P.H. Lond., of Shaftesbury House, Grays, Essex, eldest son of the late Robert Stirling, Tweed Green, Peebles, N.B., to Nora, only daughter of Charles Bromley, Belle Vue House, Goole, Yorks.

DEATHS.

BRINTON.—On May 7th, at 7, College-terrace, Belsize Park, N.W., Mary, widow of the late William Brinton, M.D., F.R.S., Physician to St. Mary's Hospital, in her 62nd year.

BURNIE.—On May 1st, at his residence, Haughton House, Bradford, William Burnie, M.D. Edin., L.R.C.P. Edin., in the 76th year of his age.

BURTON.—On May 6th, at Kelso, John Burton, M.D. Edin.

DAVIES.—On May 9th, at his residence, West-street, Rye, Robert Coker Nash Davies, M.R.C.S.E., in his 62nd year.

DAVIES.—On April 16th, at Remson-street, New York, Bartholomew Watson Davies, M.D. Edin., of Kingston, Jamaica.

FRAZER.—On May 10th, at Armagh, Henry Frazer, M.D. Glasg., L.K.Q.C.P., L.R.C.S. Irel., Medical Officer of the Armagh Workhouse

MORTON.—On May 3rd, at 14, Hill-lane, Southampton, of influenza and congestion of the lungs, to the inexpressible grief of his family, John Henry Morton, Surgeon, of New Brompton, Kent, aged 54 years.

ROE.—On May 8th, at West-hill, Wandsworth, Richard Roe, Surgeon, late of Eccles, Lancashire, in his 82nd year.

WALKER.—On May 7th, at The Paragon, Bath, Wm. Searle Walker, M.R.C.S.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Medical Diary for the ensuing Week.

Monday, May 18.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations daily at 10 A.M.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1.30 P.M., and each day at the same hour.

CHELSEA HOSPITAL FOR WOMEN.—Operations, 2.30 P.M.; Thursday, 1.30.

HOSPITAL FOR WOMEN, SOHO-SQUARE.—Operations, 2 P.M., and on Thursday at the same hour.

METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.

ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.

CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M., and each day in the week at the same hour.

UNIVERSITY COLLEGE HOSPITAL.—Ear and Throat Department, 9 A.M.; Thursday, 9 A.M.

LONDON POST-GRADUATE COURSE.—Hospital for Sick Children, Great Ormond-st.: 4 P.M., Dr. Voelcker: The Pathology of Tuberculosis in Children (Demonstration).—Royal London Ophthalmic Hospital, Moorfields: 1 P.M., Mr. R. Marcus Gunn: Affections of the Cornea.

Tuesday, May 19.

KING'S COLLEGE HOSPITAL.—Operations, 2 P.M.; Fridays and Saturdays at the same hour.

GUY'S HOSPITAL.—Operations, 1.30 P.M., and on Friday at same hour. Ophthalmic Operations on Monday at 1.30 and Thursday at 2 P.M.

ST. THOMAS'S HOSPITAL.—Ophthalmic operations, 4 P.M.; Friday, 2 P.M.

ST. MARK'S HOSPITAL.—Operations, 2 P.M.

CANCER HOSPITAL, BROMPTON.—Operations, 2 P.M.; Saturday, 2 P.M.

WESTMINSTER HOSPITAL.—Operations, 2 P.M.

WEST LONDON HOSPITAL.—Operations, 2.30 P.M.

ST. MARY'S HOSPITAL.—Operations, 1.30 P.M. Consultations, Monday 2.30 P.M. Skin Department, Monday and Thursday, 9.30 A.M. Throat Department, Tuesdays and Fridays, 1.30 P.M. Electrotherapeutics, same day, 2 P.M.

LONDON POST-GRADUATE COURSE.—Bethlem Hospital: 2 P.M., Dr. Percy Smith: Mental Stupor, Dementia.—Hospital for Skin Diseases Blackfriars (the lecture will be delivered at the Examination Hall, Victoria Embankment): 5 P.M., Mr. J. Hutchinson: Pruriginous Affections of the Skin.

PATHOLOGICAL SOCIETY OF LONDON.—8.30 P.M. Mr. H. B. Robinson: Cystic Tumours of Jaw.—Mr. C. A. Ballance: Large Aural Exostosis. Mr. E. Roughton: Lipoma of Spermatic Cord with Hernia.—Dr. S. Sharkey: Ulcerative Colitis.—Dr. J. F. Payne: Syphilitic Caries of Calvaria in an Infant.—Dr. F. Semon: Anomalous Tumour from Aryepiglottidean Fold.—Dr. H. D. Rolleston: Myocarditis limited to the Right Side.—Dr. S. Delépine: Cultures of Psorospermia.—Mr. C. A. Ballance and Mr. S. G. Shattock: Negative Results of Psorospermial Inoculation in Animals. Card Specimens:—Dr. S. West: Secondary Sarcoma of Lung.—Dr. A. F. Voelcker: Tuberculosis of Thyroid.—Dr. Rolleston: Lung invaded with Colloid Carcinoma.—Mr. H. B. Robinson: Ulcerative Colitis.

Wednesday, May 20.

NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 10 A.M.

MIDDLESEX HOSPITAL.—Operations, 1 P.M. Operations by the Obstetric Physicians on Thursdays at 2 P.M.

ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1.30 P.M.; Saturday, same hour. Ophthalmic Operations, Tuesday and Thursday, 1.30 P.M. Surgical Consultations, Thursday, 1.30 P.M.

CHARING-CROSS HOSPITAL.—Operations, 3 P.M., and on Thursday and Friday at the same hour.

ST. THOMAS'S HOSPITAL.—Operations, 1.30 P.M.; Saturday, same hour.

LONDON HOSPITAL.—Operations, 2 P.M. Thursday & Saturday, same hour.

ST. PETER'S HOSPITAL, COVENT-GARDEN.—Operations, 2 P.M.

SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN.—Operations, 2.30 P.M.

GREAT NORTHERN CENTRAL HOSPITAL.—Operations, 2 P.M.

UNIVERSITY COLLEGE HOSPITAL.—Operations, 1.30 P.M.; Skin Department, 1.45 P.M.; Saturday, 9.15 A.M.

ROYAL FREE HOSPITAL.—Operations, 2 P.M., and on Saturday.

CHILDREN'S HOSPITAL, GREAT ORMOND-STREET.—Operations, 9.30 A.M.; Surgical Visits on Wednesday and Saturday at 9.15 A.M.

LONDON POST-GRADUATE COURSE.—Hospital for Consumption, Brompton: 4 P.M., Dr. J. Kingston Fowler: Arrest of Pulmonary Tuberculosis (with cases).—Royal London Ophthalmic Hospital: 8 P.M., Mr. A. Quarry Silcock: Glaucoma.

ROYAL METEOROLOGICAL SOCIETY.—7 P.M. Mr. W. H. Dines: On the Vertical Circulation of the Atmosphere in relation to the Formation of Storms.—Mr. A. W. Clayden: On Brocken Spectres in a London Fog.—Mr. H. Coupland Taylor: An Account of the "Leste," or Hot Wind of Madeira.—Mr. Shelford Bidwell will exhibit an Experiment showing the effect of an Electrical Discharge upon the Condensation of Steam.

EPIDEMIOLOGICAL SOCIETY OF LONDON.—8 P.M. Mr. A. Campbell Munro: Measles, an Epidemiological Study.

ROYAL MICROSCOPICAL SOCIETY.—8 P.M. Mr. E. M. Nelson: Illuminating Apparatus.—Mr. T. B. Rossiter: On a new Cysticercus and the Tænia produced from it.

Thursday, May 21.

ST. GEORGE'S HOSPITAL.—Operations, 1 P.M. Surgical Consultations, Wednesday, 1.30 P.M. Ophthalmic Operations, Friday, 1.30 P.M.

UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.; Ear and Throat Department, 9 A.M.

LONDON POST-GRADUATE COURSE.—Hospital for Sick Children, Great Ormond-st.: 4 P.M., Dr. Barlow: Rheumatism in Children.—National Hospital for the Paralysed and Epileptic: 2 P.M., Dr. Charlton Bastian: Selected cases of Disease of the Brain.—London Throat Hospital, Gt. Portland-st.: 8 P.M., Mr. Stoker: Syphilis and Phthisis of the Larynx.

HARVEIAN SOCIETY OF LONDON.—8.30 P.M. Clinical Evening. Cases will be shown by Messrs. Squire, Hill, Juler, Pepper, Spicer, and others.

Friday, May 22.

ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.

LONDON POST-GRADUATE COURSE.—Hospital for Consumption, Brompton: 4 P.M., Dr. J. Kingston Fowler: Arrest of Pulmonary Tuberculosis (with cases).—Bacteriological Laboratory, King's College: 11 A.M. to 1 P.M., Prof. Crookshank: Cultivation of Bacteria (examination of various cultivations).—Great Northern Central Hospital: 8 P.M., Dr. Galloway: Liver and Spleen.

CLINICAL SOCIETY OF LONDON.—Living Specimens at 8 P.M.:—Mr. Bruce Clarke: Case showing a New Method of Amputation just below the Knee-joint.—Mr. W. H. Bennett: Symmetrical Enlargement of Parotid Glands.—Dr. Calvert: (1) Case of Congenital Cranial Synostosis; (2) Case of Hysterical Hiccough.—Mr. W. H. Battle: Case of Fæcal Abscess after Operation.—Mr. E. H. Fenwick: Case of Congenital Scrofula.—Dr. Herringham: Case of Hereditary Chorea in an Elderly Man.—Dr. Bolton Tomson (introduced by Dr. Savill): Two cases of Hereditary Muscular Spasm.—Mr. Brodhurst: Case of Scoliosis with Rotation.—Dr. Savill: Case of Hysterical Rachialgia. Papers at 9 P.M.:—Dr. Sidney Phillips: A case of Typhoid Fever with Occlusion of the Femoral Artery during Convalescence, and with Acute Maniacal Attacks.—Dr. Ord and Dr. Copeman: A case of Leucocythæmia under observation nearly three years.—Dr. Maclagan: Cases of Neuritis and Spurious Arthritis.—Dr. Remfry: A case of Pulmonary Embolism.

Saturday, May 23.

MIDDLESEX HOSPITAL.—Operations, 2 P.M.

UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.; and Skin Department, 9.15 A.M.

LONDON POST-GRADUATE COURSE.—Bethlem Hospital: 11 A.M., Dr. Percy Smith: Clinical Demonstration.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, May 14th, 1891.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Rainfall.	Remarks at 8.30 A.M.
May 8	29·63	S.W.	53	50	92	62	48	·02	Overcast
,, 9	29·74	N.E.	54	49	95	59	48	..	Bright
,, 10	29·80	N.E.	50	49	67	55	49	·02	Overcast
,, 11	30·00	N.E.	55	52	114	70	49	..	Cloudy
,, 12	30·23	N.E.	54	51	112	80	49	..	Hazy
,, 13	30·17	N.E.	63	58	117	81	53	..	Hazy
,, 14	30·09	N.E.	58	54	97	65	55	..	Cloudy

Notes, Short Comments, & Answers to Correspondents.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

All communications relating to the editorial business of the journal must be addressed "To the Editors."

Lectures, original articles, and reports should be written on one side only of the paper.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *to be addressed "To the Publisher."*

We cannot undertake to return MSS. not used.

"CHARITY BEGINS AT HOME."

To the Editors of THE LANCET.

SIRS,—On May 28th the annual meetings of the Governors of the Royal Medical Benevolent College (Epsom) and of the Society for Relief of Widows and Orphans of Medical Men will be held at the same hour, but under somewhat different circumstances. The Epsom Council will declare the poll for the election of three pensioners out of a list of nineteen deserving candidates, and of eleven scholars out of a list of forty-four needy orphans of medical men. The Council of the Widows and Orphans will simply transact routine business connected with the relief *(with no canvassing)* of sixty-four widows of deceased members and fifteen orphans. The extraordinary thing is that the number of the members paying two guineas annually to this valuable society has diminished from 182 to 170 during the last year, and yet the Epsom list gives the names of nineteen *first applications* on behalf of the sons of medical men who have died leaving their families more or less unprovided for, notwithstanding the fact that for two guineas a year many of them might have insured £50 per annum to his widow and £15 to each child. *Verbum sap.* I am, Sirs, yours obediently,

May, 1891. C. H.

THE WRONG USE OF MEDICAL TITLES.

An Indignant Apothecary is very angry at the Medical Defence Union for prosecuting Mr. S. E. L. Smith, who, on the basis of possessing the L.S.A. Eng., constructed the following row of titles after his name—M.D., L.R.C.P., L.M., & L.S.A., as described in our Birmingham Correspondent's letter of May 2nd. "An Indignant Apothecary" will have noticed in our columns a disclaimer from the honorary secretaries of the Medical Defence Union pointing out that the Union had neither originated nor inspired the recent prosecution. Our correspondent admits that Mr. Smith ought to have indicated the American source of the degree, and considers the examination for the Apothecaries' licence as difficult as that for the Conjoint Bodies of Scotland or England, and that Mr. Smith was right in regarding the title of L.S.A. as obsolete. Our correspondent is an entire stranger to Mr. Smith, but has sent a subscription towards his expenses. It should be noted that Mr. Smith's licence dates from 1885, before the time when the examination was made to qualify in all three branches of the profession. Those who pass the examination now in its enlarged and improved form may very well resent the limitation of the title acquired, and they may fairly urge their Society to demand of Parliament to create a title more expressive of the full qualification it gives. A title conferred by Act of Parliament must be altered by the same authority, and by that only. Licentiates will not advance their good cause by defending such title-making as Mr. Smith indulged in, including a most questionable M.D. of Indianapolis, about which and the terms on which it was granted we should like to have certain information.

Mr. W. B. Griffith.—We would recommend our correspondent to apply to the Secretary of the St. John Ambulance Association, St. John's Gate, Clerkenwell.

IF *W.* will enclose his card we will answer his question.

BLOODLETTING.

To the Editors of THE LANCET.

SIRS,—In a footnote to Dr. Ogle's interesting and valuable article in your paper of May 9th, he refers to the "Civil war" in medicine during the sixteenth century on the question of bloodletting. In connexion with this subject I send you the following quotation from Freind's letter to Dr. Mead (Part II., p. 215, 1726 Edition):—

"That absurd and extravagant controversy, which in the beginning of the fifteenth Centuary distracted the judgements of all the Physicians in Europe, about bleeding in the direct or opposite side in a Pleurisy. They (the Arabians) follow'd it, it seems, the opinion of Archigenes and Aretæus, and inclin'd to the latter Practice; and for that reason were rail'd at as Revolters from the doctrine of Hippocrates and Galen, tho' neither of these lays down any constant unvariable rule in this point. The University of Salamanca indeed took part with the Arabians, and made a decree, that no one in this case should dare to let blood in the contrary arm; and to add authority to their decree, they endeavour'd to procure an edict from Charles the Fifth to second it, alledging the other method to be of no less ill consequence, than that of Luther's heresy. Experience indeed has shewn, that the Arabians had as good reason for their opinion, as their adversaries had for theirs: and M. Curtius, who was one of the most zealous writers against them, found his heart fail, when he fell ill himself of this distemper, and chose to act counter to his own notions and writings, rather than not save his life by the Arabian Practice."

In Bullein's work, reprint of the 1573 edition, p. 40, Medicus detailing his method of treatment to Antonius, says, "Note this: that what side be infected let blood on that side."

Might I suggest to Dr. Ogle that the humoral pathology and the mediæval ideas as to the composition of the blood may, perhaps, explain the phrase "to breathe a vein." Bullein considers "melancholie" to be caused by "twoo aboundaunce of euill humours," and recommends bleeding to liberate the evil humour. "Blood must be letten in the beginnyng of the sickenesse; example, like as a pot is clensed of the scumme or fome in the beginning when it plaieth on the fire." Vicary, reprint, 1577, p. 21, gives very fully the existing theory of his day, telling us of the artery, from which patients were often purposely bled, "a vessel of blood spiritual or vytal."—I am, Sirs, yours truly,

Dublin, May 9th, 1891. GEORGE FOY.

HÆMORRHAGE IN NEW-BORN CHILDREN.

DR. ERÖSS publishes in the *Gyógyászat* an account of six cases of hæmorrhage from the genitals in new-born female infants occurring recently in the First Obstetrical Clinic in Buda Pesth. One only of the children died, and she was premature, cyanotic, and unable to suck. Hæmorrhage commenced on the third day, and she died on the fourth. The uterus was small, and the mucous membrane as well as the peritoneal covering were deeply injected, small extravasations of blood existing in places. The Fallopian tubes were very tortuous. In the right parovarium there were a few cysts containing serum. The other five children were well-developed, and in all these the hæmorrhage ceased after a very few days.

Anglicanus.—Will our correspondent say from what point of view he wishes the word "hazardous" to be regarded

THE MIDWIVES BILL.

Dr. Rentoul calls our attention to an error which, he states, appeared in one of our contemporaries on May 2nd—namely, that the Lord President of the Privy Council has given a virtual pledge to grant a Select Committee for the consideration of the whole subject. Dr. Rentoul wrote to the Lord President and asked him if it were true. His lordship replied that the statement was unauthorised, and that neither he nor the Government had given any pledge.

Dr. Lewins.—In drawing attention to Dr. Gould's paper, we did not propose to open a discussion on the subject dealt with therein. Such a discussion, while, to satisfy disputants, it must occupy unlimited space, would, it seems to us, inevitably leave the question pretty much where it is now.

SAWTELL FUND.

To the Editors of THE LANCET.

SIRS,—Will you kindly allow us to acknowledge in your columns the following subscriptions, which have been already paid in or promised in answer to the appeal which was sent out on behalf of the widow and children of the late T. H. Sawtell, M.D.Lond., M.R.C.P., M.R.C.S., who died in February last of pulmonary consumption, after several years' illness, leaving very inadequate provision for his family.

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As it is proposed to close the list of subscriptions at the end of this month, we should be much obliged if all subscriptions not already sent in be forwarded as soon as possible.—Yours truly,

V. D. HARRIS, Wimpole-street, W.,
G. T. PENNY, Oakfield-road, N.,
H. TAYLOR, Kennington-park-road, S.E.

May, 1891.

PROFESSOR BUNGE'S "LEHRBUCH DER PHYSIOLOGISCHEN UND PATHOLOGISCHEN CHEMIE."

IN our notice of the above-named book last week our reviewer, by inadvertence, expressed a wish that the work might appear in an English dress. Our readers, however, will recall that a translation has already appeared, and was, in fact, reviewed in our columns a few months ago.

Mr. S. T. H. Parkes.—The extra-transparent optical glass referred to in our last issue is not apparently as yet in the market. It is a Swedish invention, and our announcement was made on the authority of a publication issued in Northern Europe.

Dr. Towers-Smith.—The article entitled "Rewards of the Profession," published in a recent number of THE LANCET, was based on a paper in the *London Quarterly Review*.

Dr. Joynt.—The paper is marked for insertion.

Paradox has forgotten to enclose his card.

"SAVE ME FROM MY FRIENDS."

DR. ROBERTS of Chester owes but little thanks to his so-called friend, Mr. O. O. Williams, who writes in the *Chester Chronicle* a fulsome account of his visit to the skin dispensary over which Dr. Roberts presides. As Mr. Williams lets us know that he is himself a B.Sc. and a medical student, we may candidly tell him that we hope, unless he is going to abstain from advertising himself and his friends in the lay press, that he will never get beyond the student stage. Dr. Roberts is the president of the Medical Society at Chester; so he doubtless has the respect of his professional brethren, and we would not put such a slight upon him as to suppose that he is in any way a party to such offensive flattering. But he owes it to himself to let his friend understand that the old proverb is still true—"He that blesseth his friend with a loud voice, it shall be accounted a curse unto him." It will probably also make him careful not to invite men outside the profession to his clinic.

L.R.C.S.I.—A disclaimer from the hon. secretaries of the Medical Defence Union was inserted in our last number, page 1077.

HOSPITAL ABUSE.

To the Editors of THE LANCET.

SIRS,—In your issue for last week you publish a letter from "A Sufferer" bringing grave and sweeping charges against special hospitals. I hope that some of the older members of the profession will take up the cudgels on their behalf, but meanwhile I trust you will allow me to most emphatically deny his sweeping generalities on behalf of myself and colleagues at the Royal Chest Hospital, City-road. If I see there patients who strike me as not being suitable cases (pecuniarily, I mean), I invariably inquire as to whether they have had previous medical attendance; if their reply be affirmative, I next write to their family doctor and ask him whether they really cannot afford to pay for further advice. If the practitioner thinks I ought to do so, I allow them to continue in attendance; if, on the other hand, I am told that the patients can still afford to pay a fair price for advice and medicine, I tell them that they need not renew their letter (each letter lasts six weeks only), and advise them to return to their previous doctor, writing him my views on the case. This is, I think, the fairest way to act in the interests of everybody, and I have already received several letters from practitioners thanking me for the procedure. If the staffs of all special hospitals would act thus, I feel sure that all friction would soon cease.

I am, Sirs, yours truly,

Finsbury-square, May, 1891. FRED. J. SMITH.

AN EXPLOSIVE MIXTURE.

To the Editors of THE LANCET.

SIRS,—The following note may be worthy of publication in your journal:—

Having occasion to make a disinfectant fluid to apply to an offensive surface on a body awaiting post mortem examination I chanced to select permanganate of potash. Thinking the solution might dry too quickly and inefficiently deodorise the part, it occurred to me to add glycerine on account of its hygroscopic powers. Putting a drachm of the crystals into a three-ounce bottle I added two ounces of water and one of glycerine, and agitated the mixture. To my great surprise the cork and part of the contents were violently ejected, and the remaining portion developed great heat. Everyone is familiar with the danger of mixing glycerine and nitric acid; I have not, however, seen any mention of a combination of it and permanganate of potash. I observed the mixture became brown, losing its purple colour like a deoxidised solution of the salt; and as no effervescence took place, it is probable that the glycerine combined with the oxygen liberated by decomposition of the salt, and that, further, it possesses by some affinity of its own the power of producing rapid decomposition of the permanganate. Perhaps some chemist will kindly explain.

I am, Sirs, yours obediently,

May 11th, 1891. JOHN GRANT, M.B., C.M.Edin.

FEES FOR AMBULANCE LECTURES.

To the Editors of THE LANCET.

SIRS,—A lecturer only receives one guinea for each lecture delivered to a St. John Ambulance class, and his travelling expenses. Any balance that remains after the payment of expenses goes to the Order of St. John of Jerusalem, to help to defray the expenses of those classes which are unable to pay anything towards their cost, such as those given to the working classes and poor lads attending night schools.

I am, Sirs, yours faithfully,

May, 1891. F.R.C.S.

ENGLISH MEDICAL SERVICE IN THE LATE RUSSO-TURKISH WAR.

To the Editors of THE LANCET.

SIRS,—Perhaps some of your readers may be able to supply me with an answer to the following question, Did the English surgeons who served with the Turkish Army during the Russo-Turkish war receive any reward in the shape of medals? If so, what were they, and are they allowed to be worn here in uniform?

I am, Sirs, yours faithfully,

Stockport, May 11th, 1891. JUVENAL.

CIVIL MEDICAL SERVICE IN INDIA.

To the Editors of THE LANCET.

SIRS,—I shall feel obliged by your publishing the following:—For some time past private agencies have been in the habit of procuring medical men from England, Scotland, and Ireland to fill the posts of civilian surgeons and physicians in various districts in India. Splendid promises are made, and some senior man is usually asked whilst in the old countries to do the part of procuring the services of the poor unfortunate. On arrival in India the victim finds the people here in no way responsible by document for the words of the gentleman seen at home, and by degrees the whole venture turns out a huge fraud. Only lately it was remarked in a case where a medical man was to be got out on a small salary with a maximum amount of work, "If a man is fool enough to come out and work for so little, why should we offer more inducements." My advice is to every man intending practising in India or the colonies to accept no post whatever unless all agreements are previously signed "at home," and duly vouched as to honesty and so on. As matters are conducted now, the medico is a lamb to be ill-treated by 'an unsympathetic" public. I beg to enclose my card.

I am, Sirs, your obedient servant,

India, April 22nd, 1891. VICTIM.

ERRATA.—In Dr. Collins' letter, published in our last issue, p. 1066, line 25 from bottom of first column, for "resolution," read *resolution;* and in line 6 of next column, for "continue," read *combine.*—In Dr. A. Cordes' letter, published last week, p. 1078, for "Rome," read *France;* and for "v. Dorwault L'Officin," read *v. Dorvault L'Officine.*

COMMUNICATIONS, LETTERS, &c., have been received from—Dr. Wilks, London; Dr. Towers-Smith; Dr. Steele, London; Dr. Macnaughton Jones; Dr. Handford, Nottingham; Dr. Harkin, Belfast; Mr. D'Arcy Power; Dr. Thin, London; Mr. Tweedy; Dr. Horrocks; Mr. Lawson Tait; Sir Morell Mackenzie; Dr. Delépine; Mr. Duke; Dr. Hingston Fox; Mr. More Madden; Dr. Leslie Phillips, Birmingham; Mr. John Poland; Dr. Theodore Williams; Dr. Pavy, London; Mr. W. H. Clark, Plymouth; Mr. Hartt, Greenwich; Mr. Michelli, London; Dr. Baines; Dr. Halliburton, London; Miss Yates, London; Messrs. Margrave Bros., Llanelly; Surgeon-Major Lawrie, Hyderabad; Messrs. Thorp and Co.; Dr. Grant, Ringwood; Mr. Bridgman; Messrs. Oliver and Boyd; Mr. Feeny, Walsall; Dr. Roberts, Chester; Messrs. Pearson and Co., Stepney; Brigade-Surgeon Amesbury, Brighton; Mr. Pagan Lowe, Bath; Dr. Anderson, Spennymoor; Messrs. Crossley, Moir, and Co.; Mr. Todd, London; Dr. Spiller, London; Messrs. Kegan Paul and Co.; Dr. Boteman, London; Dr. Joll; Rev. N. Bromley; Dr. Gordon Hill, Brighton; Mr. J. W. Taylor, Birmingham; Messrs. Evans and Walter, Chippenham; Mr. Mackenzie, London; Messrs. Battle and Co.; Dr. Barnes, Carlisle; Dr. Malcolm, London; Messrs. Griffin and Co.; Mr. E. Morgan; Messrs. Constable, Edinburgh; Messrs. Salter Bros., London; Dr. W. J. Collins; Mr. G. Foy, Dublin; Dr. Albert Wilson, Leytonstone; Mr. Lionel Stretton, Kidderminster; Mr. John Gay, Putney; Dr. H. W. Jones, London; Dr. Burdon-Sanderson, Oxford; Dr. Bampton, Ilkley; Mr. Paul, Liverpool; Dr. F. J. Smith, London; Mr. Page, Redditch; Dr. Bannatyne, Greenock; Dr. Auld, Glasgow; Dr. Lewins; Mr. Manby, Wolverhampton; Mr. Martindale, London; Mr. Milhado, London; Mr. Stainwell, Rochdale; Dr. Malins, Birmingham; Dr. Maclaren, Carlisle; Mr. Collum, London; Mr. J. Smith, Stafford; Mr. Whitfield, London; Mr. Boswell; Mr. Elsdale, London; Dr. Rentoul, Liverpool; Dr. Strebz, Chicago; Messrs. Lee and Martin, Birmingham; Mr. Grün, London; Messrs. Keene and Ashwell, London; Mr. G. Fullerton, Hanwell; Messrs. Barker and Son, London; Mr. Lupton, Stratford-on-Avon; Messrs. Anderson and Co., London; Dr. Austen, London; Mr. Holder, Hull; Messrs. Keith and Co., Edinburgh; Mr. Hordley, Stoke-upon-Trent; Messrs. Allden and Johnson, Southampton; Mr. Tasker, London; Messrs. Thomas and Co., Bristol; Dr. Prout, Edinburgh; Mr. Griffith; Mr. Clarke, Hastings; Dr. J. Gordon, Aberdeen; Mr. Stirling, Essex; Mr. Little, London; Mr. Storrer; Mr. Pentland, Edinburgh; Mr. Hargreaves, London; Dr. Zangger, Russell-square; Mr. Ormond, Newcastle-on-Tyne; Mr. Hornibrook, London; Mr. Hagan, Plymouth; Mr. Adams, Rye; Dr. Moorhead, Nottingham; Mr. Coleman, Cardiff; Mr. Orr, Dresden; Mr. Gwynn, Brighton; Mr. O'Dell, Torquay; Mr. Coghill, Birmingham; Mr. Richardson, Leamington; Mr. Branthwaite, Rickmansworth; Messrs. Richardson, Liverpool; Dr. White, Sheffield; Mr. Oliver, Manchester; Mr. Eastwood, Blackburn; Mr. Scott, Manchester; Mr. Sell, London; Mr. T. A. Jones, Abaravon; Clerk, Borough of Sheffield; Victim; R. B.; F.R.C.S.; L.R.C.S.I.; Liverpool Lock Hospital; Anglicanus; Jet, London; Medical Superintendent, County Asylum, Preston; Matron, Nurses' Home, Cornwall; Bank Brewery Co., Sowerby Bridge; J. R. F., London; Matron, London; Bouillon Fleet Co.; S. H., Manchester; Z. O.; Triplex; Bachelor; *Western Daily Mercury*, Plymouth; L.R.C.P.; M.D., London; C. H.; Devon.

LETTERS, *each with enclosure*, are also acknowledged from—Dr. Diver Derby; Mr. Wood, Skibbereen; Dr. M. Jones; Messrs. W. H. Smith and Son, Birmingham; Mr. Morgan, Harborne; Mr. Morton, New Brompton; Mr. Tu'ly, Hastings; Mr. Primrose, Durham; Messrs. Lee and Nightingale, Liverpool; Mr. Forjitt, Lincoln; Messrs. Woollams and Co., London; Mr. Mendelsohn; Messrs. Burroughs, Wellcome and Co., London; Mr. Tyte, Minchinhampton; Mr. Lockwood, Huddersfield; Mr. Bayley, Tipton; Dr. Evans, Llanerchymedd; Mr. O'Meara, Loughborough; Mr. Cra'g, Wick; Mr. Greville, Brixham; Dr. Polson, Sutherland; Mr. McCullen, co. Antrim; Mr. Godfrey, Northampton; Dr. Cunningham, Bristol; Mr. Moore, Camberwell; Mr. Graham, Carnforth; Mr. Banford, Uttoxeter; Mr. Butlin; Mr. Rhodes, Nottingham; Miss Gallaher; Mr. Baily, Bond-street; Messrs. Grace, Bristol; Dr. Croke, Yorks; Mr. Branthwaite, Erdington; Dr. Ferrar, Cheshire; Dr. Hilliard, Aylesbury; Mr. Gosport; Dr. Taylor, Nottingham; Mr. Smith, Brighton; Mr. Guthrie, London; Dr. McCallen, co. Derry; Miss Debenham, St. Albans; Mr. Bray, St. Leonards-on-Sea; Mr. Maclehose; Dr. Couldrey, Doncaster; Mr. Edwards, Pontypridd; Mr. Bryden, Shipley; Dr. Buck, Clapton; Messrs. Powneby and Co.; Mr. Baily, Tipton; Mr. Green, Devon; Messrs. Porteous and Co., Glasgow; Mr. Christian, Hammersmith; Mr. Henderson, Dumfries; Mr. Westbrook, Reading; Mr. Bell, Leytonstone; Mr. Gorst, Liverpool; Mr. Thompson, Hampstead; Mr. Cochrane, Wigtownshire; Mr. Mooney, Margare; Mr. White, Dunstable; Mr Edwards, Birmingham; Mr. Thin, Edinburgh; Mr. Brinton; Dr. Cooke, Sheffield; Dr. Atkinson, Lurgan; County of Lanark; Delta, London; Secretary, General Hospital, Birmingham; L. S.; Secretary, College of Preceptors; V. A.; J. L. A.; Exchange; M.R.C.S., Clifton; North Staffs Infirmary; Cantab., London; Surgeon, Manchester; Kur und Bade Verwaltung, Homburg; J. W. P.; Sic Vos; Secretary, Union Association, Cornhill; Phosphates; M.R.C.S., London; Harpenden Hall, Herts; Medicus, Manchester; S. G.; Birkenhead; Hallfield Cottage, Hanley; Medicus, A.O.; Skilbeck; E. M.; *Reading Mercury* Office; Class Rooms, Edinburgh; York, London; Hackney Furnishing Co.; Beta, London; W., Manchester; Fides; Medicus, Deal; Beech Hurst, Hanley; Statim, Liverpool; Beta, Sheffield; A. E.; Borough of Devizes; Os Frontis, M.O H.; County Asylum, Preston; Hamilton Association.

NEWSPAPERS.—*Scotsman, Birmingham Daily Post, Cape Times, Irish Times, News, Western Times, Liverpool Daily Post, Leeds Mercury, Sunday Times, Scottish Leader, Yorkshire Post, Reading Mercury, Bristol Mercury, Labour World, Mining Journal, Windsor and Eton Gazette, Weekly Free Press, Surrey Advertiser, Hull Daily News, The Christian, Hertfordshire Mercury, Windsor and Eton Express, New Zealand Herald, Echo (Sydney), Elgin Courant, Tiverton Gazette, Melbourne Daily Telegraph, West Middlesex Standard, Leicester Daily Post, Northern Whig, Eastern Press, St. Stephen's Review, Dundee Advertiser, Ashton Standard, Shields Daily Gazette, Admiralty Gazette, Londonderry Sentinel, Royal Cornwall Gazette, Darwen Post, Durham Chronicle, Essex County Chronicle, Derby Reporter, Tessdale Mercury, Cambridge Chronicle, Devizes Gazette, Belfast News Letter, Le Temps (Paris), Nursing Record, Stamford Guardian, Worthing Gazette, Hereford Times, Chester Chronicle, &c.*, have been received.

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Advertisements (to ensure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Answers are now received at this Office, by special arrangement, to Advertisements appearing in THE LANCET.

Terms for Serial Insertions may be obtained of the Publisher, to whom all letters relating to Advertisements or Subscriptions should be addressed.

Advertisements are now received at all Messrs. W. H. Smith and Son's Railway Bookstalls throughout the United Kingdom and all other Advertising Agents.

Agent for the Advertisement Department in France—J. ASTIER, 66, Rue Caumartin, Paris.